



CINEMA DSP
DIGITAL

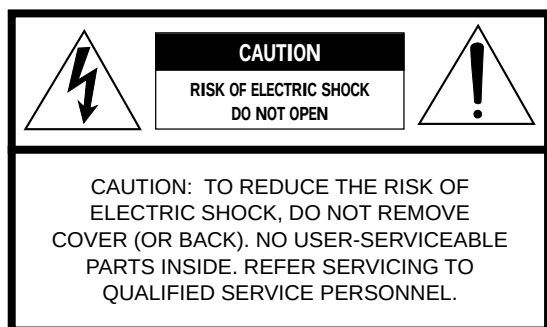
RX-V3000

Natural Sound AV Receiver
Ampli-Tuner Audio-Video



OWNER'S MANUAL
MODE D'EMPLOI

IMPORTANT SAFETY INSTRUCTIONS



• Explanation of Graphical Symbols



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert you to the presence of uninsulated “dangerous voltage” within the product’s enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert you to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

WARNING

TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS UNIT TO RAIN OR MOISTURE.

- 1 Read Instructions – All the safety and operating instructions should be read before the unit is operated.
- 2 Retain Instructions – The safety and operating instructions should be retained for future reference.
- 3 Heed Warnings – All warnings on the unit and in the operating instructions should be adhered to.
- 4 Follow Instructions – All operating and other instructions should be followed.
- 5 Water and Moisture – The unit should not be used near water – for example, near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, or near a swimming pool, etc.
- 6 Carts and Stands – The unit should be used only with a cart or stand that is recommended by the manufacturer.
- 6A A unit and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the unit and cart combination to overturn.
- 7 Wall or Ceiling Mounting – The unit should be mounted to a wall or ceiling only as recommended by the manufacturer.



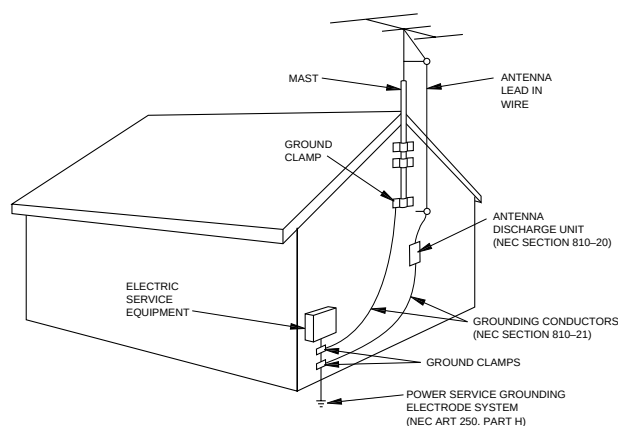
- 8 Ventilation – The unit should be situated so that its location or position does not interfere with its proper ventilation. For example, the unit should not be situated on a bed, sofa, rug, or similar surface, that may block the ventilation openings; or placed in a built-in installation, such as a bookcase or cabinet that may impede the flow of air through the ventilation openings.
- 9 Heat – The unit should be situated away from heat sources such as radiators, stoves, or other appliances that produce heat.
- 10 Power Sources – The unit should be connected to a power supply only of the type described in the operating instructions or as marked on the unit.
- 11 Power-Cord Protection – Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the unit.
- 12 Cleaning – The unit should be cleaned only as recommended by the manufacturer.
- 13 Nonuse Periods – The power cord of the unit should be unplugged from the outlet when left unused for a long period of time.
- 14 Object and Liquid Entry – Care should be taken so that objects do not fall into and liquids are not spilled into the inside of the unit.
- 15 Damage Requiring Service – The unit should be serviced by qualified service personnel when:
 - A. The power-supply cord or the plug has been damaged; or
 - B. Objects have fallen, or liquid has been spilled into the unit; or
 - C. The unit has been exposed to rain; or
 - D. The unit does not appear to operate normally or exhibits a marked change in performance; or
 - E. The unit has been dropped, or the cabinet damaged.
- 16 Servicing – The user should not attempt to service the unit beyond those means described in the operating instructions. All other servicing should be referred to qualified service personnel.
- 17 Power Lines – An outdoor antenna should be located away from power lines.
- 18 Grounding or Polarization – Precautions should be taken so that the grounding or polarization is not defeated.
- 19 For US customers only:

Outdoor Antenna Grounding – If an outside antenna is connected to this unit, be sure the antenna system is grounded so as to provide some protection against voltage surges and built-up static charges. Article 810 of the National Electrical Code, ANSI/NFPA 70, provides information with regard to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of antenna discharge unit, connection to grounding electrodes, and requirements for the grounding electrode.

Note to CATV system installer:

This reminder is provided to call the CATV system installer's attention to Article 820-40 of the NEC that provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building, as close to the point of cable entry as practical.

EXAMPLE OF ANTENNA GROUNDING



NEC – NATIONAL ELECTRICAL CODE

FCC INFORMATION (for US customers only)**1. IMPORTANT NOTICE : DO NOT MODIFY THIS UNIT!**

This product, when installed as indicated in the instructions contained in this manual, meets FCC requirements. Modifications not expressly approved by Yamaha may void your authority, granted by the FCC, to use the product.

2. IMPORTANT : When connecting this product to accessories and/or another product use only high quality shielded cables. Cable/s supplied with this product **MUST** be used. Follow all installation instructions. Failure to follow instructions could void your FCC authorization to use this product in the USA.**3. NOTE :** This product has been tested and found to comply with the requirements listed in FCC Regulations, Part 15 for Class "B" digital devices. Compliance with these requirements provides a reasonable level of assurance that your use of this product in a residential environment will not result in harmful interference with other electronic devices.

This equipment generates/uses radio frequencies and, if not installed and used according to the instructions found in the users manual, may cause interference harmful to the operation of other electronic devices.

Compliance with FCC regulations does not guarantee that interference will not occur in all installations. If this product is found to be the source of interference, which can be determined by turning the unit "OFF" and "ON", please try to eliminate the problem by using one of the following measures:

Relocate either this product or the device that is being affected by the interference.

Utilize power outlets that are on different branch (circuit breaker or fuse) circuits or install AC line filter/s.

In the case of radio or TV interference, relocate/reorient the antenna. If the antenna lead-in is 300 ohm ribbon lead, change the lead-in to coaxial type cable.

If these corrective measures do not produce satisfactory results, please contact the local retailer authorized to distribute this type of product. If you can not locate the appropriate retailer, please contact Yamaha Electronics Corp., U.S.A. 6660 Orangethorpe Ave, Buena Park, CA 90620.

The above statements apply **ONLY** to those products distributed by Yamaha Corporation of America or its subsidiaries.

We Want You Listening For A Lifetime

YAMAHA and the Electronic Industries Association's Consumer Electronics Group want you to get the most out of your equipment by playing it at a safe level. One that lets the sound come through loud and clear without annoying blaring or distortion – and, most importantly, without affecting your sensitive hearing.

Since hearing damage from loud sounds is often undetectable until it is too late, YAMAHA and the Electronic Industries Association's Consumer Electronics Group recommend you to avoid prolonged exposure from excessive volume levels.

**CAUTION**

CAUTION: READ THIS BEFORE OPERATING THIS UNIT.

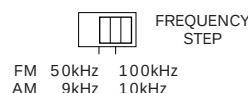
- 1 To assure the finest performance, please read this manual carefully. Keep it in a safe place for future reference.
- 2 Install this unit in a well ventilated, cool, dry, clean place with at least 30 cm on the top, 20 cm on the right and left, and 10 cm at the back of this unit for ventilation space — away from direct sunlight, heat sources, vibration, dust, moisture, and/or cold.
- 3 Locate this unit away from other electrical appliances, motors, or transformers to avoid humming sounds. To prevent fire or electrical shock, do not place this unit where it may get exposed to rain, water, and/or any type of liquid.
- 4 Do not expose this unit to sudden temperature changes from cold to hot, and do not locate this unit in a environment with high humidity (i.e. a room with a humidifier) to prevent condensation inside this unit, which may cause an electrical shock, fire, damage to this unit, and/or personal injury.
- 5 On the top of this unit, do not place:
 - Other components, as they may cause damage and/or discoloration on the surface of this unit.
 - Burning objects (i.e. candles), as they may cause fire, damage to this unit, and/or personal injury.
 - Containers with liquid in them, as they may cause electrical shock to the user and/or damage to this unit.
- 6 Do not cover this unit with a newspaper, tablecloth, curtain, etc. in order not to obstruct heat radiation. If the temperature inside this unit rises, it may cause fire, damage to this unit, and/or personal injury.
- 7 Do not plug in this unit to a wall outlet until all connections are complete.
- 8 Do not operate this unit upside-down. It may overheat, possibly causing damage.
- 9 Do not use force on switches, knobs, and/or cords.
- 10 When disconnecting the power cord from the wall outlet, grasp the plug; do not pull the cord.
- 11 Do not clean this unit with chemical solvents; this might damage the finish. Use a clean, dry cloth.
- 12 Only the voltage specified on this unit must be used. Using this unit with a higher voltage than specified is dangerous and may cause fire, damage to this unit, and/or personal injury. YAMAHA will not be held responsible for any damage resulting from use of this unit with a voltage other than specified.
- 13 To prevent damage by lightning, disconnect the power cord from the wall outlet during an electrical storm.
- 14 Take care of this unit so that no foreign objects and/or liquid drops inside this unit.
- 15 Do not attempt to modify or fix this unit. Contact qualified YAMAHA service personnel when any service is needed. The cabinet should never be opened for any reasons.
- 16 When not planning to use this unit for long periods of time (i.e. vacation), disconnect the AC power plug from the wall outlet.
- 17 Be sure to read the “Troubleshooting” section on common operating errors before concluding that this unit is faulty.

- 18 Before moving this unit, press STANDBY/ON to set this unit in the standby mode, and disconnect the AC power plug from the wall outlet.

This unit is not disconnected from the AC power source as long as it is connected to the wall outlet, even if this unit itself is turned off. This state is called the standby mode. In this state, this unit is designed to consume a very small quantity of power.

FREQUENCY STEP switch

(General and China models only)



Because the interstation frequency spacing differs in different areas, set the FREQUENCY STEP switch (located at the rear) according to the frequency spacing in your area. Be sure to change the setting of this switch with the AC supply lead of this unit disconnected from the AC outlet.

For CANADIAN CUSTOMERS

To prevent electric shock, match wide blade of plug to wide slot and fully insert.

This Class B digital apparatus complies with Canadian ICES-003.



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Introduction

Welcome to the exciting world of digital home entertainment. This unit is the most complete and advanced AV receiver available. Though some of the more advanced features of this unit may not be familiar to you, they are easy to use. Incorporated state-of-the-art technology such as Dolby Digital and DTS can bring the same audio experience to your home as they have brought to feature films in quality theaters around the world. To make the listening experience even more enjoyable, this unit includes a number of exclusive, digitally created listening environments known as digital sound fields. Choosing a sound field program is like transporting yourself to such venues as an outdoor arena, a European church, or a cozy jazz club. Take some time now to read more about these features and enjoy the new experiences this unit brings to your home theater.

Features

- **Dolby Digital and DTS decoder**
- **Dolby Digital Matrix 6.1/DTS ES decoder**
- **Digital Sound Fields (DSP)**
- **CINEMA-DSP: Dolby Digital + DSP and DTS + DSP**
- **Virtual CINEMA DSP and HP CINEMA DSP**
- **Multi-function remote control**
- **Built-in 8-channel power amplifier**

Getting Started

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Controls and Functions

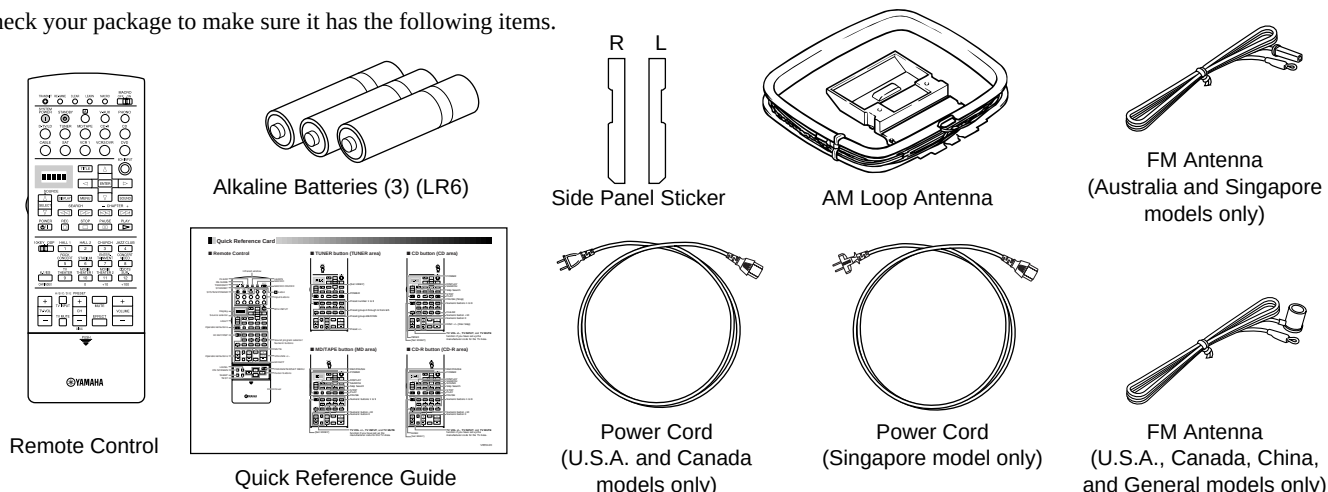
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Getting Started

Checking the Package Contents

Check your package to make sure it has the following items.



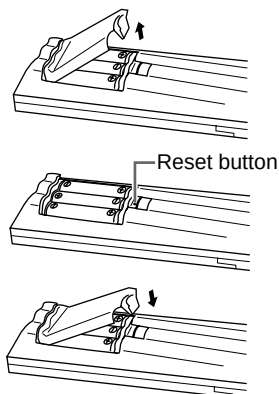
When finding it difficult to fit this unit onto the shelf, remove the side panels after removing the screws tightened on the side panels. Put this sticker to cover the screw holes after tearing off the back side of the sticker.

Installing Batteries in the Remote Control

Insert the batteries in the correct direction by aligning the + and – marks on the batteries with the polarity illustrations (+ and –) inside the battery compartment.

Change the batteries periodically. Do not use old batteries together with new ones.

Do not use different types of batteries (such as alkaline and manganese batteries) together. Read the packaging carefully as these different types of batteries may have the same shape and color.



About changing batteries

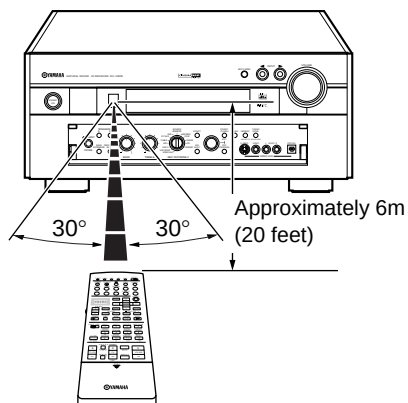
As the batteries wear out, the operating range of the remote control decreases and the **TRANSMIT** indicator does not flash or its light becomes dim. When you notice any of these conditions, change all of the batteries.

Notes:

- If the remote control is without batteries for more than 20 minutes, or if worn out batteries remain in the unit, the contents of the memory may be cleared. If the memory is cleared, insert new batteries and reprogram any functions that may have been cleared.
- After you insert new batteries, be sure to push **RESET** in the battery compartment using a ball point pen or similar object before using the remote control. (This does not clear the contents of the memory.)

Using the Remote Control

The remote control transmits a directional infrared beam. Be sure to aim the remote control directly at the remote control sensor on the main unit to operate. When the sensor is covered or there is a large object between the remote control and the main unit, the sensor cannot receive signals. The sensor may not be able to receive signals properly when it is exposed to direct sunlight or a strong artificial light (such as a fluorescent or strobe light). In this case, change the direction of the light or reposition the main unit to avoid direct lighting.



About handling the remote control

Handle the remote control with care.

Do not spill water or other liquids on the remote control.

Do not drop the remote control.

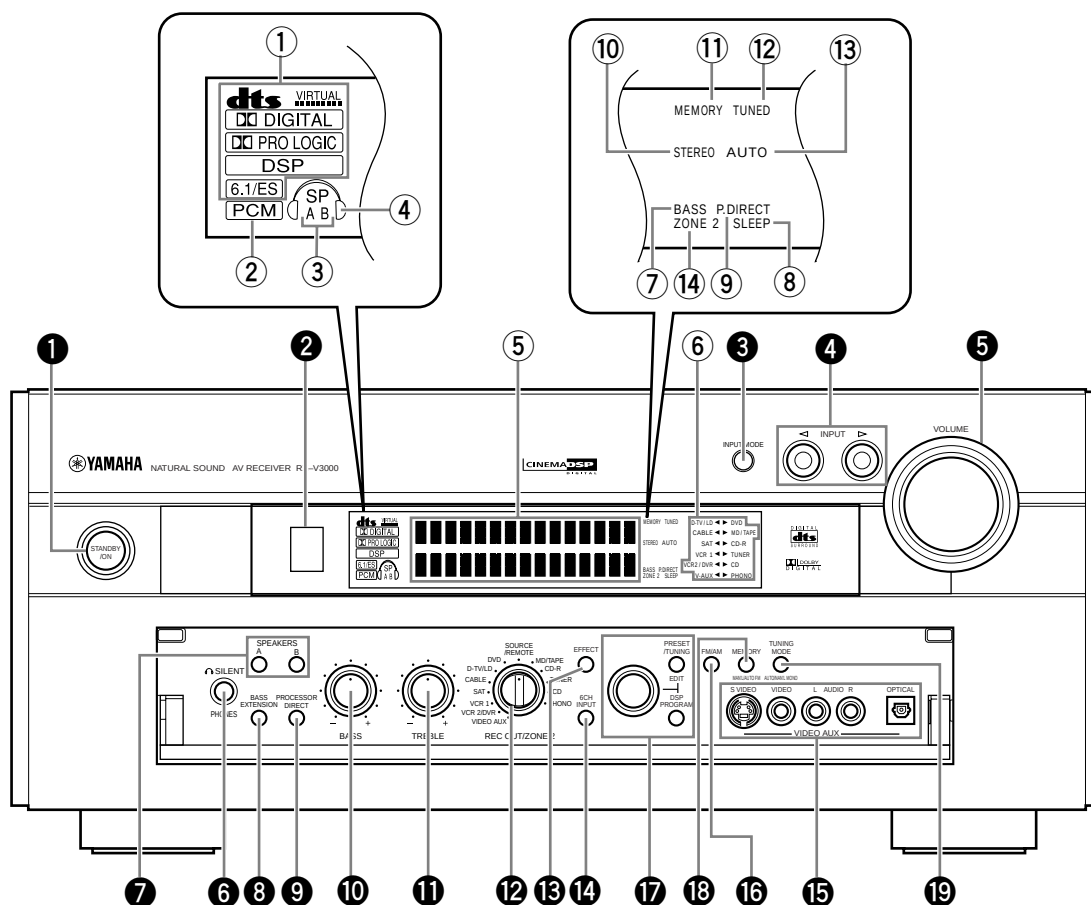
Do not leave or store the remote control in the following types of conditions:

- high humidity or temperature such as near a heater, stove or bath; or
- dusty places; or
- in places subject to extremely low temperatures.

Controls and Functions

Front Panel

When you are not operating the controls behind the front panel door, close the door. To open the door, press gently on the lower part of the panel.



1 STANDBY/ON

Turns this unit on (On mode) and off (Standby mode). When you turn on this unit, you will hear a click and there will be a four to five second delay before this unit can reproduce sound. In Standby mode, this unit consumes a small amount of power to be ready to respond to the remote control.

2 Remote Control Sensor

3 INPUT MODE

Selects the type of audio signal for the selected source.

4 INPUT selector

Selects a source component.

5 VOLUME

Controls the output level of all audio channels. This does not affect the REC OUT level.

6 PHONES

Outputs audio signals for private listening using headphones. When you connect headphones, no signals are output to the PREOUT jacks or the speakers.

7 SPEAKERS A/B

When SPEAKERS A/B is on, these buttons turn on the set of Main speakers connected to the A and/or B terminals on the rear panel.

8 BASS EXTENSION ON/OFF

When BASS EXTENSION is on, this feature boosts the bass frequency of the left and right Main channels by +6dB (60Hz) while maintaining overall tonal balance. This boost is useful if you do not use a subwoofer. However, this boost may not be noticeable if the Main speakers are set to "SMALL" and the bass output mode is set to "SWFR."

9 PROCESSOR DIRECT ON/OFF

When PROCESSOR DIRECT is on, BASS, TREBLE, BALANCE, and BASS EXTENSION are bypassed, eliminating any alteration of the original signal.

10 BASS

Adjusts the low frequency response for the left and right Main speaker channels. Turn the control to the right to increase the low frequency response and turn the control to the left to decrease the low frequency response.

11 TREBLE

Adjusts the high frequency response for the left and right Main channels. Turn the control to the right to increase the high frequency response.

12 REC OUT/ZONE 2

Selects the source you want to direct to the audio/video recorder.

13 EFFECT

Switches the effect speakers (Center, Front Effect, Rear and Rear Center) on and off. If you turn off the output of these speakers using **EFFECT**, all DTS and Dolby Digital audio signals are directed to the Main left and right channels except for the LFE channel.

14 6CH INPUT

Switches between 6CH INPUT mode and normal input modes. 6CH INPUT mode takes priority over the source selected with the **INPUT** selector. You cannot use DSP sound field programs while using an external decoder.

15 VIDEO AUX

Inputs audio and video signals from a portable external source such as a video camera. To reproduce source signals from these jacks, select V-AUX as the input source. To direct this source to the **VCR 1** and **VCR 2/DVR** output jacks, select VIDEO AUX using **REC OUT**.

16 FM/AM

Switches the reception band between FM and AM.

17 Multi jog knob

Selects the tuning frequency in the tuning mode.

Selects the preset station after pressing **PRESET/TUNING** to display a colon (:) in the tuning mode.

Selects the DSP program after pressing **DSP PROGRAM**.

18 MEMORY (MAN'L/AUTO FM)

Stores a station in the memory.

19 TUNING MODE (AUTO/MAN'L MONO)

Switches the tuning mode between automatic and manual. To select the automatic tuning mode, press this button so that the AUTO tuning indicator appears in the front panel display (the STEREO indicator also appears if receiving a stereo broadcast).

To select the manual tuning mode, press this button so that the AUTO tuning indicator does not appear.

Display Indicators**① Processor indicators**

When any function of DTS/VIRTUAL/Dolby Digital/Dolby PROLOGIC/DSP/Dolby Digital Matrix 6.1/DTS ES is operating, its indicator lights up.

② PCM

Lights up when this unit is reproducing PCM (Pulse Code Modulation) digital audio signals.

③ SPEAKERS A/B

Lights up according to which set of Main speakers is selected. Both indicators light up when both sets of speakers are selected.

④ Headphones

Lights up when headphones are connected.

⑤ Multi-information display

Shows the current DSP program and other information when adjusting or changing settings.

⑥ Input source

Shows the current input source with the arrow-shaped cursor.

⑦ BASS

Lights up while the **BASS EXTENSION** is on.

⑧ SLEEP

Lights up while the Sleep Timer is on.

⑨ P. DIRECT

Lights up while the **PROCESSOR DIRECT** is on.

⑩ STEREO

Lights up when the AUTO tuning indicator is on and the unit is receiving a strong signal for an FM stereo broadcast.

⑪ MEMORY

Flashes to show a station can be saved.

⑫ TUNED

Lights up when this unit tunes into a station.

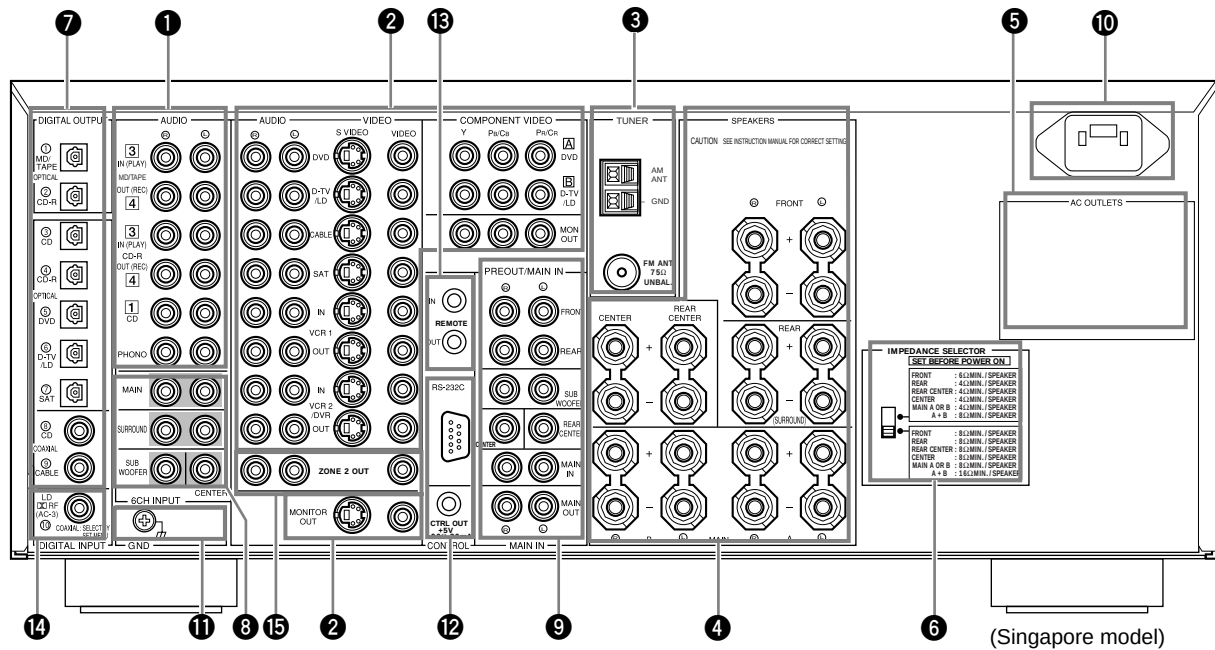
⑬ AUTO

Shows that the Tuner is in Automatic tuning mode.

⑭ ZONE 2

Lights up when you select the input source while the remote control is in the Zone 2 mode.

Rear panel



(Singapore model)

① Audio component jacks**② Video component jacks****③ Antenna input terminals****④ Speaker terminals****⑤ AC OUTLETS**

Use these outlets to supply power to your other audio/video component.

⑥ IMPEDANCE SELECTOR**⑦ DIGITAL OPTICAL/COAXIAL jacks****⑧ 6CH INPUT jacks****⑨ PRE OUT/MAIN IN jacks****⑩ AC power cord**

Connect to a power outlet.

General, China, and Australia models cannot disconnect the AC power cord from the unit.

⑪ GROUND terminal**⑫ RS232C/CTRL OUT +5V terminals**

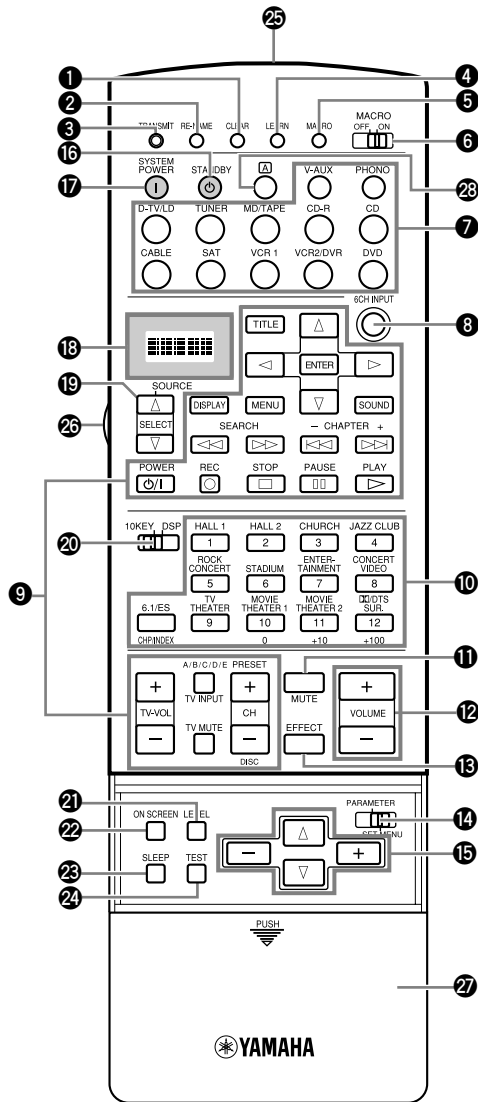
These are control expansion terminals for Substitute Custom Installation use. Consult your dealer for details.

⑬ REMOTE IN/OUT jacks**⑭ RF (AC-3) input jack**

General, China, and Singapore models only.

⑮ ZONE 2 OUT jack

Remote Control



1 CLEAR

Erases the content of learning.

2 RE-NAME

Renames the input name.

3 TRANSMIT

Flashes while the remote control is sending signals.

4 LEARN

Starts the learning function.

5 MACRO

Makes the MACRO setting.

6 MACRO ON/OFF

Turns the macro function on and off.

7 Input buttons

Selects the input source for playback.

8 6CH INPUT

Switches to the 6CH INPUT mode when using an external decoder.

9 Operational buttons

Performs the operation selected by input selector.

10 Sound program selector/Numeric buttons

Selects the sound program.

11 MUTE

Mutes the sound. Press again to restore audio output at the previous volume level.

12 VOLUME +/-

Increases or decreases the volume level.

13 EFFECT

Switches the effect speakers (Center, Front, Rear, and Rear Center) on and off.

14 PARAMETER/SET MENU

Selects the PARAMETER mode or SET MENU mode.

15 Cursor buttons

Selects and adjusts DSP program parameters and SET MENU items according to the position of PARAMETER/SET MENU.

16 STANDBY

Turns off the power.

17 SYSTEM POWER

Turns on the power.

18 Display

Displays the input or operation status.

19 Source selector

Selects the source component.

20 10 KEY/DSP

Selects the numeric button mode or DSP program mode.

21 LEVEL

Selects the effect speaker channel to be adjusted and sets the level.

22 ON SCREEN

Selects the On-Screen Display mode for your video monitor.

23 SLEEP

Sets the sleep timer.

24 TEST

Outputs the test tone to adjust the speaker levels.

25 Infrared window

26 LIGHT

Turns the light on or off. When you press this button once, the light turns on for about ten seconds. Press again to turn off the light.

27 Cover

28 [A] button

Switches the control area.

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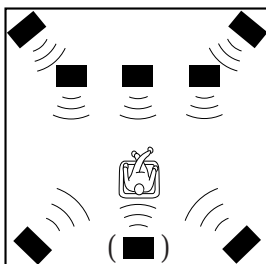
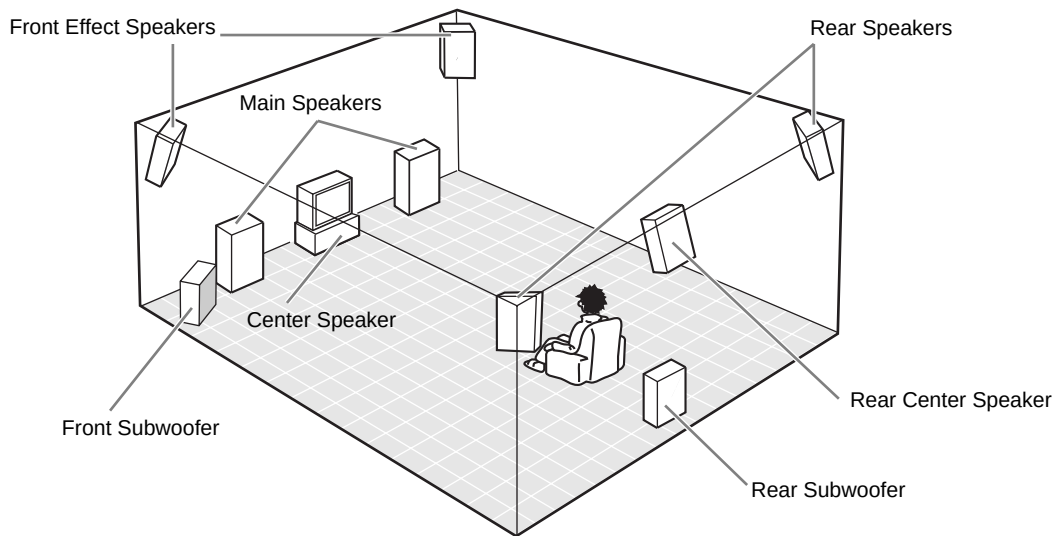
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Speaker System Configurations

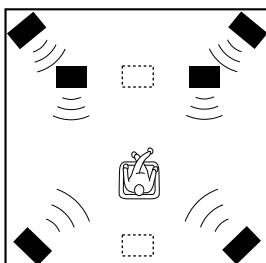
The most complete speaker configuration consists of eight speakers: the left and right Main speakers, a Center speaker, the left and right Rear speakers, the left and right Front Effect speakers, and a Rear Center speaker. If you do not use eight speakers, you can direct the signals for speakers that are not in your system to other speakers in your configuration. A Subwoofer can be used with any of these configurations to produce a fuller sound.



■ Eight or Seven Speaker Configuration –Full Cinema DSP–

When you reproduce feature film software, this configuration fully expresses the powerful and realistic sound qualities of 70 mm multitrack audio. The dialogue is positioned as if it were coming from directly on the screen, the sound effect is positioned slightly behind the screen, and the soundtrack music is positioned even further behind the screen to express the width and depth of the overall presentation. This configuration makes the most of this unit's capability.

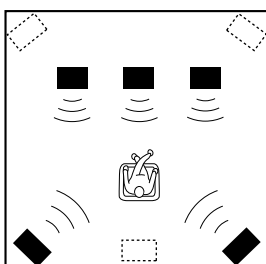
The Rear Center speaker is useful for playback of 6-channel Digital Surround.



■ Six Speaker Configuration –Hi Fi DSP–

This configuration is used the most for audio playback with HiFi DSP. It does not position the dialogue sound as well as a seven or eight speaker configuration. However, it creates a dynamic DSP (Digital Sound Field Processor) sound field which adds depth to the sound.

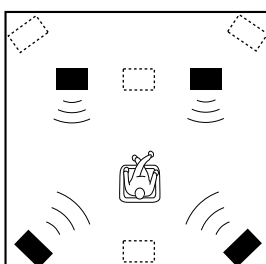
For this speaker configuration, change SET MENU item 1A. CENTER SP to "NONE" and 1D. REAR CT SP to "NONE".



■ Five Speaker Configuration –Standard 5.1 Channel–

This configuration does not express the height of the sound field as well as the seven or eight speaker configuration. However, it positions the dialogue sound as coming directly from the screen.

For this speaker configuration, change SET MENU item 1F. FRNT EFCT SP to "NONE" and 1D. REAR CT SP to "NONE".



■ Four Speaker Configuration –Minimum Requirement–

In this configuration, the Center speaker signals and Front Effect speaker signals are directed to the left and right Main speakers.

For this speaker configuration, change SET MENU item 1A. CENTER SP to "NONE," item 1F. FRNT EFCT SP to "NONE," and item 1D. REAR CT SP to "NONE".

Connecting Audio Components

Before you connect any components, disconnect the power supply to all the components you plan to connect including this unit and determine which jacks are for the left and right channels and for input and output.

When you connect other YAMAHA audio component (such as a CD player or changer, MD deck, or tape deck), connect to terminals with the same number labels. Yamaha applies this labelling system to all its products.

In the hookup illustrations on the following pages:

■ Connecting to digital jacks

This unit has digital jacks for direct transmission of digital signals through either coaxial or fiber optic cables. You can use the digital jacks to input PCM, DTS, and Dolby Digital bitstreams. When you connect components to both the **COAXIAL** and **OPTICAL** jacks (for CD and CABLE) priority is given to the input signals from the **COAXIAL** jack. All digital input jacks are acceptable for 96 kHz/24 bit digital signals.



■ About the dust protection cap

Pull out the cap from the optical jack before you connect the fiber optic cable. Do not discard the cap. When you are not using the optical jack, be sure to put the cap back in place. This cap protects the jack from dust.

The **OPTICAL** jacks on this unit conform to the EIA standard. If you use a fiber optic cable that does not conform to this standard, this unit may not function properly.

■ Connecting a turntable

These jacks are for connecting a turntable with an MM or high output MC cartridge. If you have a turntable with a low output MC cartridge, use an inline boosting transformer or MC-head amplifier when connecting to these jacks.

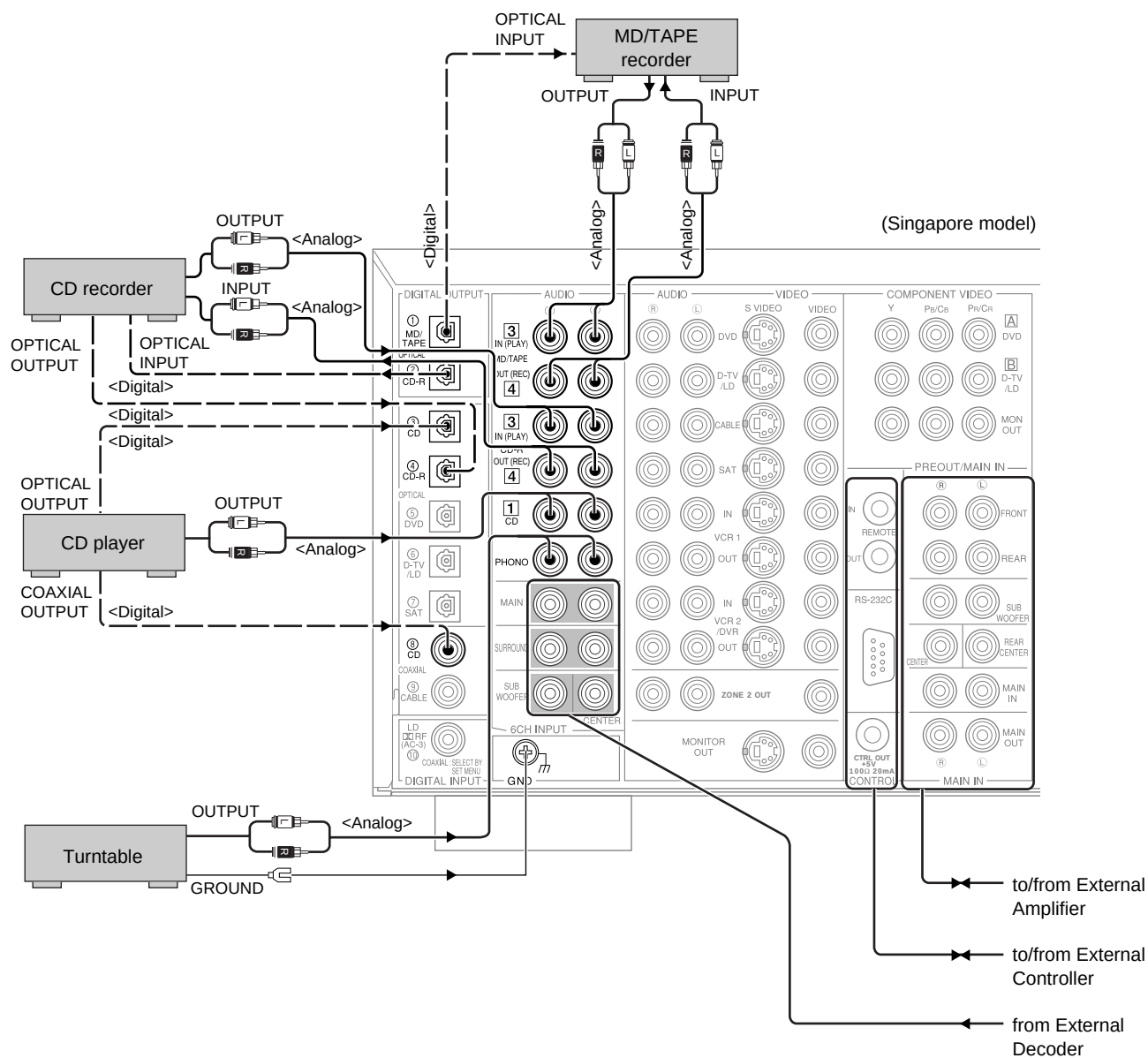
The GND terminal does not electrically ground the turntable. It simply reduces noise in the signal. In some cases, you may hear less noise if you do not connect to the GND terminal.

■ Connecting a CD player

- The **COAXIAL CD** and **OPTICAL CD** jacks are available for a CD player which has coaxial or optical digital outputs.
- When you connect a CD player to both the **COAXIAL CD** and **OPTICAL CD** jacks, priority is given to the input signals from the **COAXIAL CD** jack.

■ Connecting an MD or DAT deck

- When you connect a recorder to this unit, keep the deck's power on while using this unit. If the power is off, this unit may distort the sound from other component.
- When you record from source component connected to this unit while this unit's power is off, the recorded sound may be distorted. To avoid this problem, turn on this unit.
- When you connect a CD recorder to both the analog and digital input and output jacks, priority is given to the digital signals.



Connecting Video Components

Before you connect any components, disconnect the power supply to all the components you plan to connect including this unit and determine which jacks are for the left and right channels and for input and output. After you finish all hookups, check them again to make sure they are correct.

About the video jacks

There are three types of video jacks. Video signals input through the **VIDEO** jacks are the conventional composite video signals. Video signals input through the **S VIDEO** jacks are separated into luminance (Y) and color (C) video signals. The S-video signals achieve high quality color reproduction.

Video signals input through the **COMPONENT VIDEO** jacks are separated into luminance (Y) and color difference (**P_B/C_B**, **P_R/C_R**) video signals. The jacks are also separated into three for each signal. The labels of the component video jacks may be different depending on the component (e.g. Y, C_B, C_R / Y, P_B, P_R / Y, B-Y, R-Y/ etc.). Component video signals provide the best quality in picture reproduction.

If your video component has an S-video output or component video output, you can connect it to this unit. Connect the S-video signal output jack on your video component to the **S-VIDEO** jack or connect the component signal output jacks on your video component to the **COMPONENT VIDEO** jacks.

Composite **VIDEO** jack



S VIDEO jack

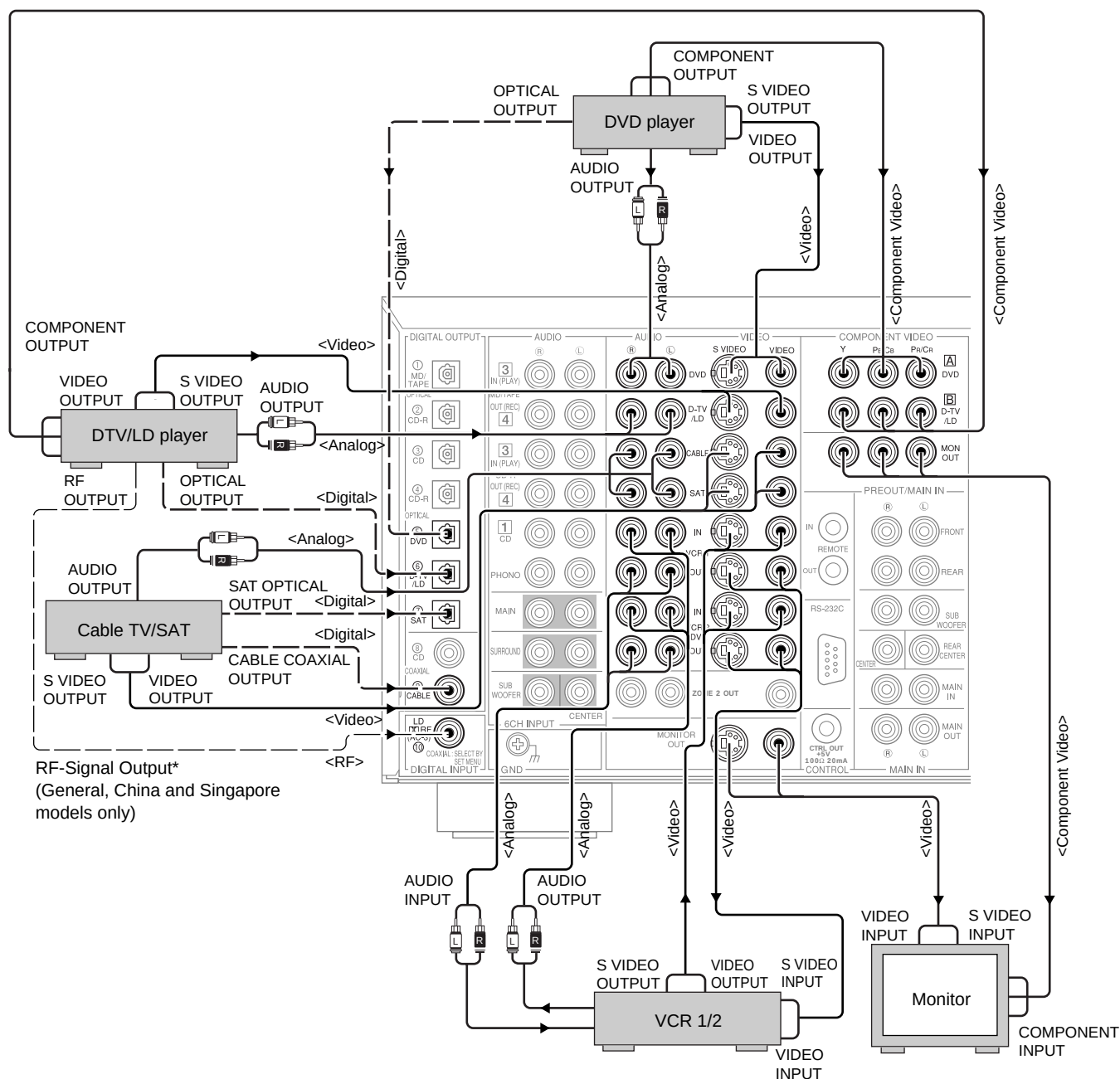


COMPONENT VIDEO jacks



Notes:

- Each type of video jack works independently. Signals input through the composite video, S-video, and component jacks are output through the corresponding composite video, S-video, and component jacks respectively.
- Use a commercially available S-video cable when connecting to the **S VIDEO** jacks, and commercially available video cables when connecting to the **COMPONENT VIDEO** jacks.
- When you are using the **COMPONENT VIDEO** jacks, check the details in the owner's manual that came with the component being connected.



* <U.S.A., Canada, and Australia models>

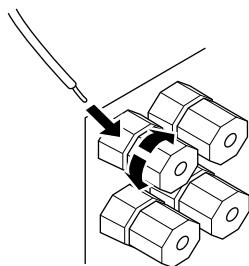
If your LD player has a Dolby Digital RF signal output jack, connect it to this unit through an external RF demodulator.

(You can connect the Dolby Digital RF signal output of your LD player to the **COAXIAL** jacks using the "I/O ASSIGN" on the SET MENU.)

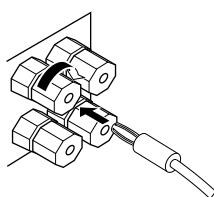
Connecting Speakers

This section explains how to connect speakers to this unit. After you finish connecting your speakers, use the SET MENU to change the signal output settings according to the number and size of the speakers in your configuration.

Before connecting any speaker cords, identify which terminals are for the right and left channels and also the + and – polarities. If you connect speakers with the wrong polarity (+ to –), this unit will not reproduce clear sound.



Banana Plug



(Except for Singapore model)

■ Using speaker cords

A speaker cord is actually a pair of insulated cables running side by side. One of the cables is colored or shaped differently, perhaps with a stripe, groove, or ridge. To make sure you always connect speakers with the correct polarity, determine the difference between the cables of your speaker cord, make a note of which cable you plan to use for which polarity (+ and –), and always connect the speaker cords consistently.

- ❶ Strip off 9 mm (3/8 in.) of an inch of insulation from the ends of the cables.
- ❷ Twist the exposed wires of the cable together to prevent short circuits.
- ❸ Loosen the terminal knob by turning it counterclockwise.
- ❹ Insert only the exposed portion of the cable into the slot in the side of the terminal, and tighten the terminal knob.

Note:

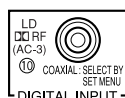
- If your speaker cords have banana plugs, tighten the terminal knob and insert the plug into the end of the terminal. (Except for Singapore model)

Caution:

- Connect the speaker cords with care to avoid creating a short circuit. If you turn on the power and there is a short circuit, this unit may be damaged even though the protection circuit automatically shuts off the power.

■ About the RF (AC-3) signal input jack <For China, Singapore, and General models only.>

If your LD player has an  RF (AC-3) signal output jack, connect it to the  RF (AC-3) input jack on this unit. For this connection, change SET MENU item 7D. COAXIAL IN (10) to “LD-RF”. If  RF (AC-3) and analog signals are input at the same time, priority is given to the RF signals. When you want to reproduce  RF (AC-3) signals, set the input mode to “D.D. RF” using **INPUT MODE**.

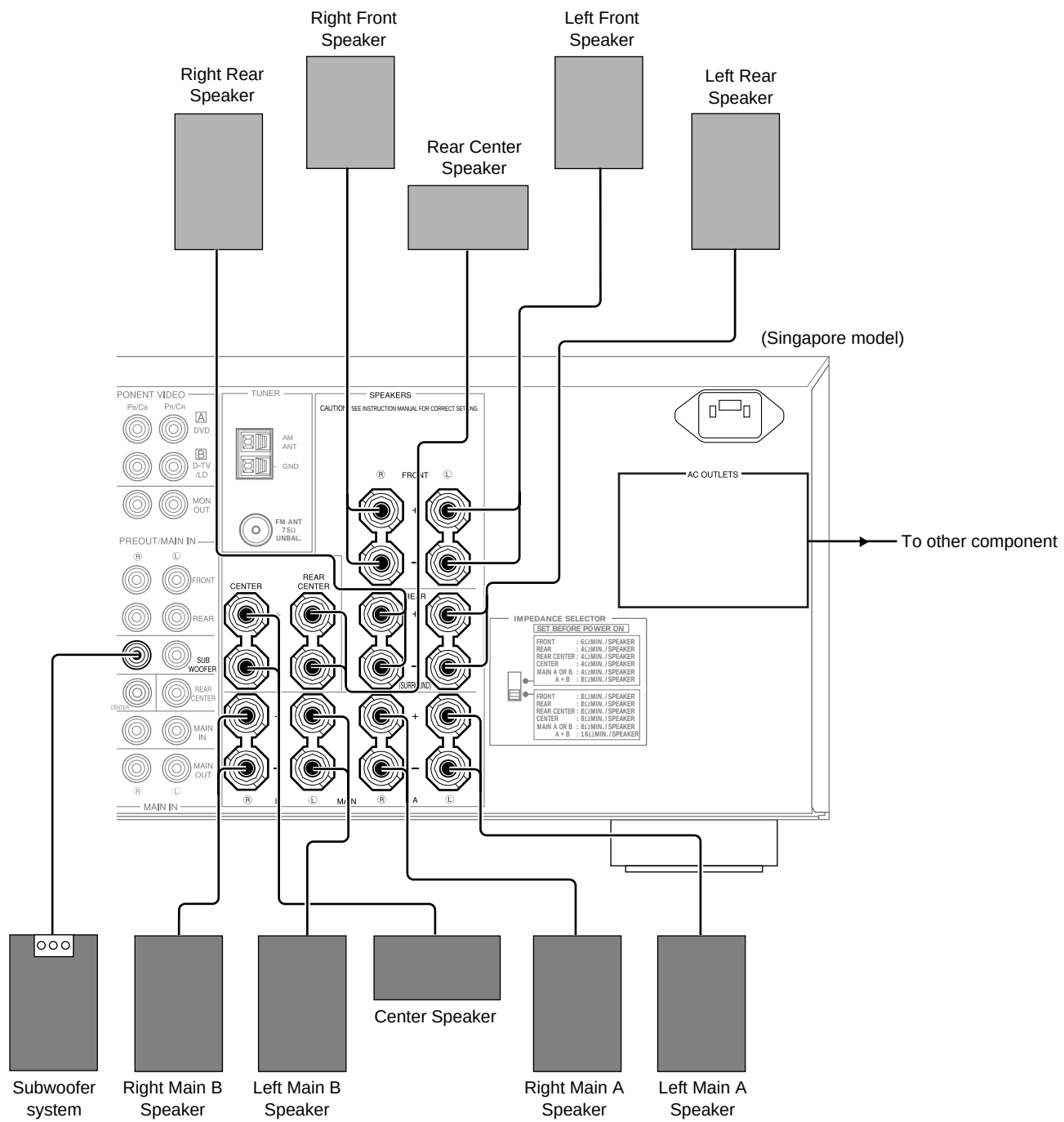


Note:

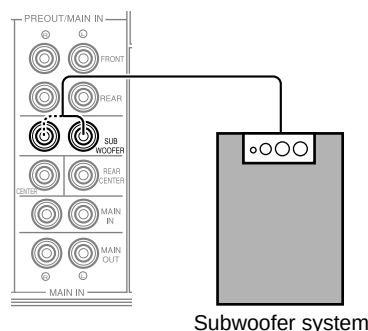
-  RF (AC-3) signals cannot be output using the **REC OUT** selector. When you record sound or images from an LD player, be sure to connect the player to either the **DIGITAL OPTICAL** or analog **AUDIO** jacks.

Caution:

- Even if you connect an LD player with an  RF (AC-3) output jack to this unit, you cannot reproduce Dolby Digital sound from all LD discs. You must playback an LD disc encoded with Dolby Digital signals in order to take advantage of the Dolby Digital sound.



Connecting Subwoofers



■ Connecting a front subwoofer

- Connect the signal input jack on your subwoofer to one of the **PRE OUT/MAIN IN SUBWOOFER** jacks.

Notes:

- The **SUBWOOFER** jacks (output) have a built-in high cut-off filter (90 Hz). When using a powered subwoofer, set the high cut-off frequency to "MAX" on your Subwoofer.
- Both **SUBWOOFER** jacks output the same signal.

■ Connecting a rear subwoofer

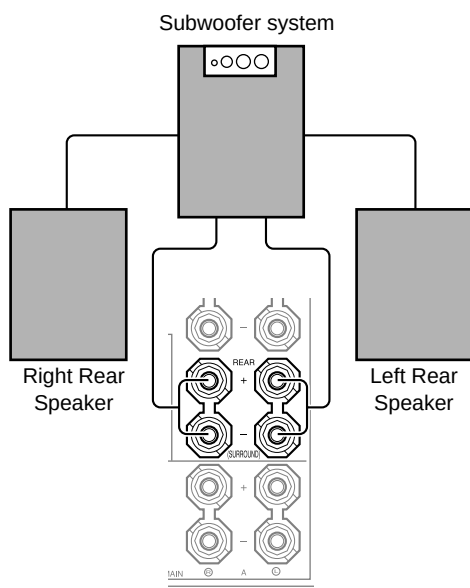
By using both Front and Rear Subwoofers, the CINEMA-DSP sound field programs can produce realistic movie effects with powerful, dynamic sound. To take advantage of this dynamic sound, be sure to set the 1C. REAR L/R SP item in the SET MENU to "LARGE", and connect your Rear speakers and Subwoofer as described below.

- 1 Connect the right **+** input terminal on your Subwoofer to the **REAR ^R +** terminal, and the right **-** input terminal on your Subwoofer to the **REAR ^R -** terminal with speaker cords.
- 2 Connect the left **+** input terminal on your Subwoofer to the **REAR ^L +** terminal, and the left **-** input terminal on your Subwoofer to the **REAR ^L -** terminal with speaker cords.
- 3 Connect your Rear speakers to the output terminals on the Rear Subwoofer.

Be sure to connect the Rear speakers to the Subwoofer with the correct polarity.

Note:

- Adjust the speaker volume for the Subwoofer with the controls on the Subwoofers, not on this unit.



Connecting an External Decoder

This unit is equipped with six additional input jacks (left and right MAIN, CENTER, left and right SURROUND and SUBWOOFER) for discrete multi-channel input from an external decoder, sound processor, or pre-amplifier. Connect the output jacks on your external decoder to the **6CH INPUT** jacks.

Be sure to match the left and right outputs to the left and right input jacks for the main and surround channels.

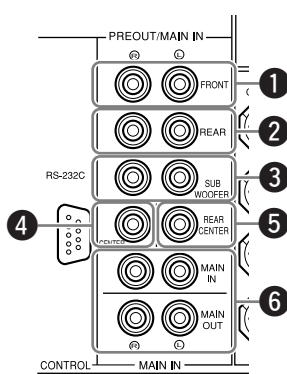
To listen to the sound from your external decoder, press **6CH INPUT** on this unit or the remote control.

Notes:

- When you select **6CH INPUT** as the input source, this unit automatically turns off the digital sound field processor, and you cannot listen to DSP programs.
- When you select **6CH INPUT** as the input source, changing **SPEAKER SET** on the **SET MENU** is not affected.

Connecting External Amplifiers

If you want to increase the power output to the speakers, or want to use another amplifier, connect an external amplifier to the **PRE OUT/MAIN IN** terminals as follows.



① FRONT jacks

Front Effect channel line output jacks.

② REAR (Surround) jacks

Rear channel line output jacks.

③ SUBWOOFER jacks

Main, Center, and Rear channel frequencies below 90 Hz are output through these jacks. You can also direct DTS and Dolby Digital LFE signals to this output.

Adjust the volume level of the subwoofer with the control on the subwoofer. Subwoofer volume cannot be adjusted from this unit.

④ CENTER jack

Center channel line output jack.

⑤ REAR CENTER jack

Rear Center channel line output jack.

⑥ MAIN jacks

MAIN IN jacks Line input to this unit's Main channel amplifiers.

When connecting to these jacks, signals input to the preamplifier of this unit will not be output from the main amplifier of this unit.

MAIN OUT jacks Main channel line output jacks. The signals output through these jacks are affected by **BASS**, **TREBLE**, **BALANCE**, and **BASS EXTENSION** settings.

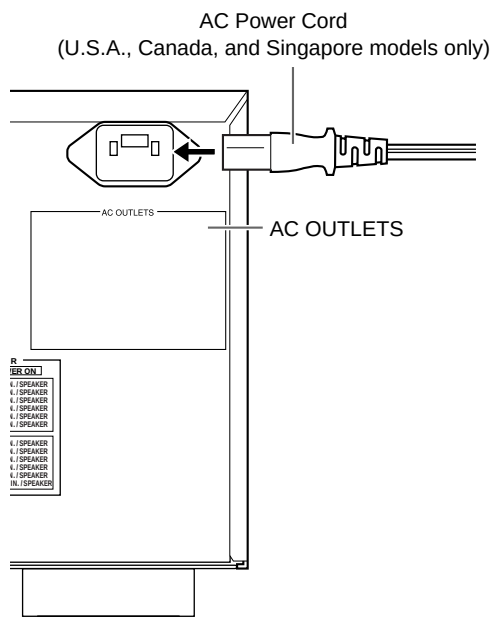
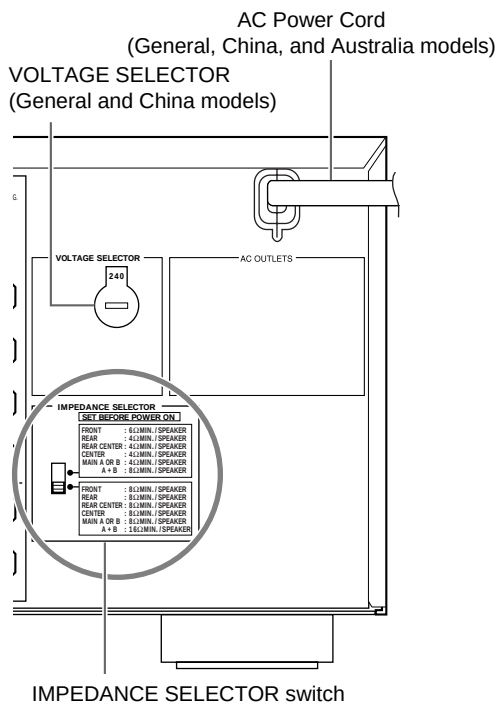
Others

WARNING

Do not change the **IMPEDANCE SELECTOR** switch setting while the power to this unit is on, otherwise this unit may be damaged.

IF THIS UNIT FAILS TO TURN ON WHEN THE STANDBY/ON SWITCH IS PRESSED:

The **IMPEDANCE SELECTOR** switch may not be set to either end. If so, set the switch to either end when this unit is in the standby mode.

**IMPEDANCE SELECTOR switch**

Select the position whose requirements your speaker system meets.

**FRONT EFFECT:**

The impedance of each speaker must be 6Ω or higher.

<U.S.A. and Canada models>

REAR: The impedance of each speaker must be 4Ω or higher.

REAR CENTER: The impedance of the speaker must be 4Ω or higher.

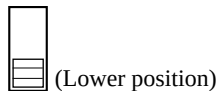
<Except for U.S.A. and Canada models>

REAR: The impedance of each speaker must be 6Ω or higher.

REAR CENTER: The impedance of the speaker must be 6Ω or higher.

CENTER: The impedance of the speaker must be 4Ω or higher.

MAIN: If you use one pair of main speakers, the impedance of each speaker must be 4Ω or higher.
If you use two pairs of main speakers, the impedance of each speaker must be 8Ω or higher.

**FRONT EFFECT:**

The impedance of each speaker must be 8Ω or higher.

REAR: The impedance of each speaker must be 8Ω or higher.

REAR CENTER:

The impedance of the speaker must be 8Ω or higher.

CENTER: The impedance of the speaker must be 8Ω or higher.

MAIN: <Except for Canada model>

If you use one pair of main speakers, the impedance of each speaker must be 8Ω or higher.

If you use two pairs of main speakers, the impedance of each speaker must be 16Ω or higher.

<For Canada model only>

The impedance of each speaker must be 8Ω or higher.

Connecting the AC power cord

Plug in this unit to a wall outlet when all connections are complete.

Caution:

- Do not use other AC power cords than the one provided. (U.S.A., Canada, and Singapore models only)

AC OUTLETS

Use these to connect the power cords from your other components to this unit. The power to the switched outlets is controlled by this unit's **STANDBY/ON** (**SYSTEM POWER** or **STANDBY** on the remote). These outlets will supply power to any connected unit whenever this unit is turned on. The maximum power (total power consumption of components) that can be connected to **AC OUTLETS** is 100 W.

Voltage selector (General and China models)

The voltage selector on the rear panel of this unit must be set for your local main voltage **BEFORE** plugging into the AC main supply.

On-Screen Displays (OSD)

You can display the operation information for this unit on a video monitor. If you display the SET MENU and DSP sound field program parameter settings on a screen, it is much easier to see the available options and parameters than it is by reading this information on the front panel display.

If a video source is being reproduced, the OSD is superimposed over the image.

If a video source is not being reproduced (or the source component is set in the standby mode), you can set the OSD to turn on (blue background) or off with "14 DISPLAY SET" on the SET MENU.

OSD Modes



Full Display (ex.)



Short Display (ex.)

You can change the amount of information the OSD shows.

Full Display This mode always shows the sound field program parameter settings on the video monitor.

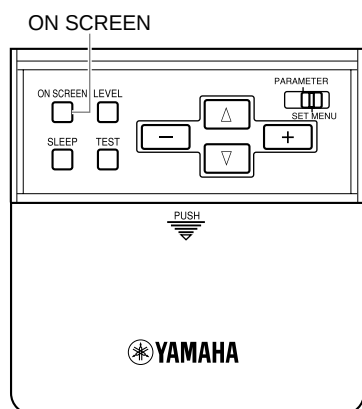
Short Display This mode briefly shows the same contents as the front panel display at the bottom of the screen, then disappears.

Display Off This mode briefly shows the "DISPLAY OFF" message at the bottom of the screen, then disappears. Afterwards, no changes to operations appear on the screen except those of the **ON SCREEN**.

Notes:

- When you choose the Full Display mode, the **INPUT** selector, **VOLUME**, and some other types of operation information are displayed at the bottom of the screen in the same format as the front panel display.
- The OSD signal is not output through the **REC OUT** selector, and will not be recorded with any video signal.
- The SET MENU, TEST DOLBY SUR and TEST DSP appear regardless of the OSD mode.

Selecting the OSD Mode



1 When you turn on the power, the video monitor and front panel display shows the level of the main volume for a few seconds and then switches to show the current sound field program.

2 Press **ON SCREEN** on the remote control repeatedly to change the display mode.

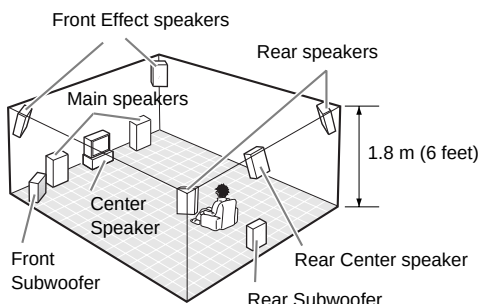
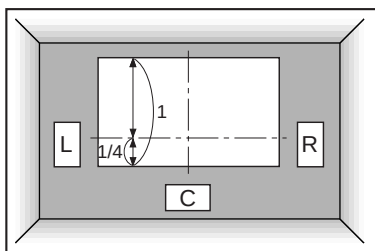
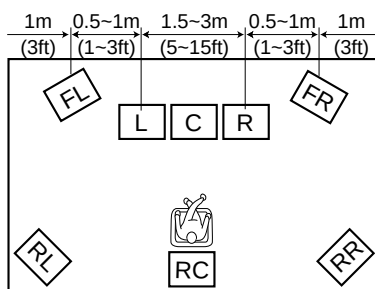
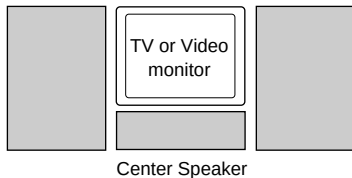
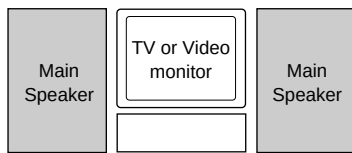
The OSD mode changes in the following order: Full Display, Short Display, and Display Off.

Notes:

- If you choose a video input source that has component connected to both the **S VIDEO IN** and composite **VIDEO IN** jacks, and both the **S VIDEO OUT** and composite **VIDEO OUT** jacks are connected to a video monitor, the video signal is output to both the **S VIDEO OUT** and **VIDEO OUT** jacks. However, the OSD is carried only on the S-video signal. If no video signal is input, the OSD is carried on both the S-video and composite video signals.
- If your video monitor is connected only to the **COMPONENT VIDEO** jacks of this unit, the OSD is not shown. Make sure to connect your video monitor to the **COMPONENT VIDEO** jack and either **VIDEO** or **S VIDEO** jacks if you would like to see the OSD.
- Playing back video software that has an anti-copy signal or video signals with a lot of noise may produce unstable images.

Speaker Placement

Where you place your speakers has a tremendous effect on how well your system sounds.



■ Placing the Main speakers

Place the left and right Main speakers an equal distance from the main listening position.

If you have a TV or video monitor in your system, the distance of each speaker from each side of the TV or video monitor should be the same.

■ Placing the Center speaker

If you have a TV or video monitor in your system, align the front face of the Center speaker with the front face of the monitor. Place the speaker as close to the monitor as possible, such as directly over or under the monitor. If you place the speaker under the monitor, the Front Effect speakers can adjust the height of the sound to correspond with the action on the screen (depending on the listener's position). If you have a projection screen in your system, place the Center speaker under the screen. Be sure to align the speaker with the center of the screen.

■ Placing the Front Effect, Rear, and Rear Center speakers

The Front Effect speakers should be placed about 0.5~1m (1~3 feet) outside the Main speakers and in the front of the room. They should be turned toward the main listening position. Place the Rear speakers in the back of the room so they face the main listening position. The Rear speakers can be placed farther apart than the Front Effect speakers. The Front Effect and Rear speakers should be placed about 1.8m (6 feet) above the floor.

Once you begin listening to programs, continue to adjust the speaker placement until you obtain a balanced sound from the Main speakers and the Front Effect and Rear speakers.

■ When you use a projection screen

Place the speakers as shown in the illustration.

The Main speakers should be placed about one-quarter of the way up from the bottom of the screen.

Place the Center speaker in the center and directly under the screen. The Center speaker provides precise dialogue localization.

When you use a projection screen with your system, the Front Effect speakers provide better effect quality. The CINEMA-DSP sound field programs raise the sound from the Center speaker upward and provide natural sound corresponding with the video images.

■ Placing the Subwoofers

Place the Front Subwoofer near the Main speakers. Turn it slightly toward the center of the room to reduce wall reflections.

If you use a Rear Subwoofer, place it behind the main listening position. The placement of the Rear Subwoofer is not critical because of the ultralow frequencies of the sound being reproduced.

By adding a high quality Subwoofer to the speaker system configurations shown on page 9, you can enjoy more powerful and realistic movie effects, even if your Main speakers are large.

Notes:

- If you use different brands of speakers (with different tonal qualities) in your configuration, the tone of a moving human voice and other types of sound may not shift smoothly. We recommend that you use speakers from the same manufacturer or speakers with the same tonal quality.
You can also adjust the output levels and equalization of your effect speakers using the SET MENU.
- If you are using small speakers, the addition of a Subwoofer will reinforce the sound effects of movies.

Speaker Settings

This unit has seven SPEAKER SET items in the SET MENU that you must set according to the number of speakers in your configuration and their size. The following table summarizes these SPEAKER SET items, and shows the initial settings as well as other possible settings. If the initial settings are not appropriate for your speaker configuration, change the settings in the SET MENU.

Summary of SPEAKER SET items 1A through 1G

Item	Description	Initial Setting
1A. CENTER SP	Selects the Center channel output mode according to the size of the Center speaker. The possible settings are LRG (large), SML (small), and NONE.	LRG
1B. MAIN SP	Selects the Main channel output mode according to the size of the Main speakers. The possible settings are LARGE and SMALL.	LARGE
1C. REAR L/R SP	Selects the Rear channel output mode according to the size of the Rear speakers. The possible settings are LRG (large), SML (small), and NONE.	LRG
1D. REAR CT SP	Selects the Rear Center channel output according to the size of the Rear Center speaker. The possible settings are LRG (large), SML (small), and NONE.	LRG
1E. LFE/BASS OUT	Selects a speaker for the LFE/Bass signal output. The possible settings are SWFR (subwoofer), MAIN, and BOTH.	BOTH
1F. FRNT EFCT SP	Selects the Front Effect signal output mode for the Front Effect signals. The possible settings are YES and NONE.	YES
1G. MAIN LEVEL	Selects the output level for the Main channel signal. The possible settings are Normal and -10 dB.	Normal

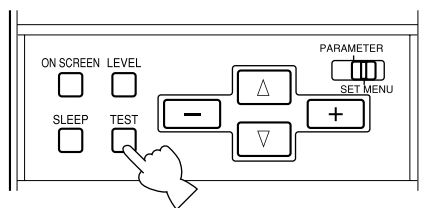
Note:

- When you adjust the balance of the output level from the Right and Left Main speakers, use "L/R BALANCE" on the SET MENU.

Speaker Output Levels

This section explains how to set the speaker levels using the test tone. There are two tests; Dolby Surround test and DSP test.

Before You Begin



1 Set **BASS** and **TREBLE** on the front panel to “0” (the center position) and turn off **BASS EXTENSION**.

2 Use the remote control for the next three steps. Sit in the main listening position and set **PARAMETER/SET MENU** on the remote control to **PARAMETER**.

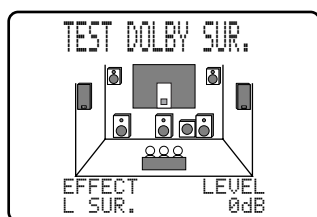
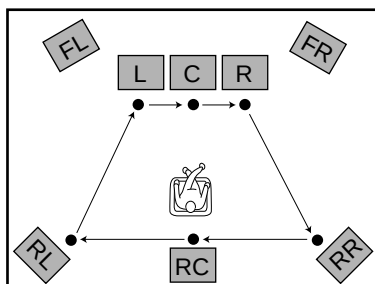
3 Set **10 KEY/DSP** to **DSP** and press **DOLBY/DTS SUR**.

4 Press **TEST** to select the test to be performed.

Select “**TEST DOLBY SUR.**” to match the output levels of the Center, Rear Center and Rear Left and Rear Right speakers to the left and right Main speakers.

Select “**TEST DSP**” to match the output levels of the Front Effect speakers to the Main speakers.

Dolby Surround Test



1 After the Dolby Surround test is selected, “**TEST DOLBY SUR.**” appears in the video monitor and in the front display.

2 Adjust **VOLUME +/-** to hear the test tone for each speaker. Make an adjustment so that the output level coming from each speaker is same.

- The test tone is produced from the left Main speaker, Center speaker, right Main speaker, Rear Right speaker, Rear Center speaker, and Rear Left speaker in order. The tone lasts for 2.5 seconds each time.

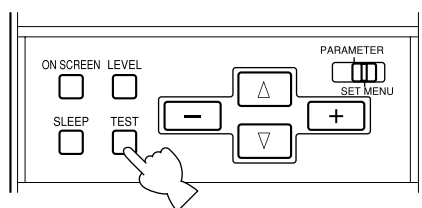
- Press and hold Δ or ∇ to stop the sequence temporarily.

- Press Δ or ∇ to select the speaker to be tested.

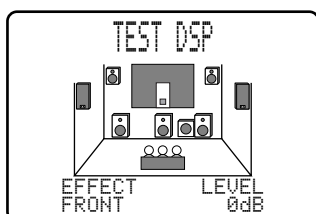
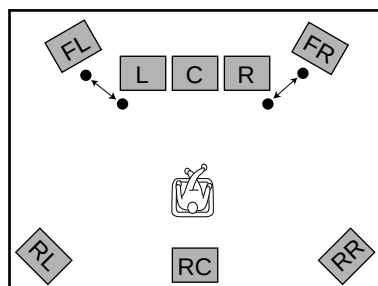
3 When adjusting is complete, press **TEST** twice to stop the test tone.

You can increase the output levels of the effect channels (Rear Left, Rear Right, Rear Center, and Center) to +10dB. If the output level of the Center, Rear and Rear Center speakers is lower than that from the Main speakers even after you have increased the sound volume level of the Center, Rear, and Rear Center speakers up to +10dB, set the 1G. MAIN LEVEL item to this setting decreases the Main speaker volume level to about one-third the normal level. After you set the 1G. MAIN LEVEL item in the SET MENU to “-10dB,” adjust the levels for the Center, Rear, and Rear Center speakers again.

DSP Test



TEST DSP
MAIN



EFFECT FRONT LEVEL
FRONT 0dB

1 After the dsp test is selected, “TEST DSP” appears on the video monitor and in the front display.

2 Adjust **VOLUME +/-** to hear the test tone. Make an adjustment so that the output level coming from the Front Effect speakers is the same as that of the Main speakers.

- The test tone is produced alternately from the Front Effect speakers and Main speakers. The tone is produced for 2.5 seconds each time.

3 Adjust the output level of the Front Effect speakers using **+** and **-** so the output level coming from the Front Effect speakers is the same as that of the Main speakers.

- The test tone is automatically produced from the Front Effect speakers while you are adjusting the level.

Notes:

- If you cannot hear the test tone, set **VOLUME**, turn off the power, and check the speaker cords and hookups.
- The test tone can be reproduced separately from the left and right Front Effect speakers. This is useful when you want to check the hookups to these speakers. Press Δ to reproduce the test tone from the left speaker, and press ∇ to reproduce the tone from the right speaker. (The OSD shows which speaker is reproducing the tone.)
- You cannot adjust the output level of the left and right Front Effect speakers separately.
- You can hear the test tone only from the Right Front Effect speaker by pressing ∇ and the Left Front Effect speaker by pressing Δ . You can return to the original mode by releasing the buttons.
- The tonal quality of the speakers can be adjusted using the 5. CENTER GEQ items in the SET MENU.
- If the sound volume of the Front Effect speakers is lower than that of the Main speakers, even after you have increased the output level up to +10 dB, set the 1G. MAIN LEVEL item in the SET MENU to “-10dB.” Setting the 1G. MAIN LEVEL item to “-10dB” decreases the Main speaker output level to about one-third of the normal level. After you set the 1G. MAIN LEVEL item in the SET MENU to “-10dB,” repeat the TEST DOLBY SUR. procedure on the previous page.
- If you do not use Front Effect speakers, set the 1F FRNT EFCT SP item in the SET MENU to “NONE”, and the DSP Front Effect signals will be mixed with the Main channel signals.
- When the headphones are connected to this unit, you cannot select the Dolby Surround test and the dsp test.

Basic Operation

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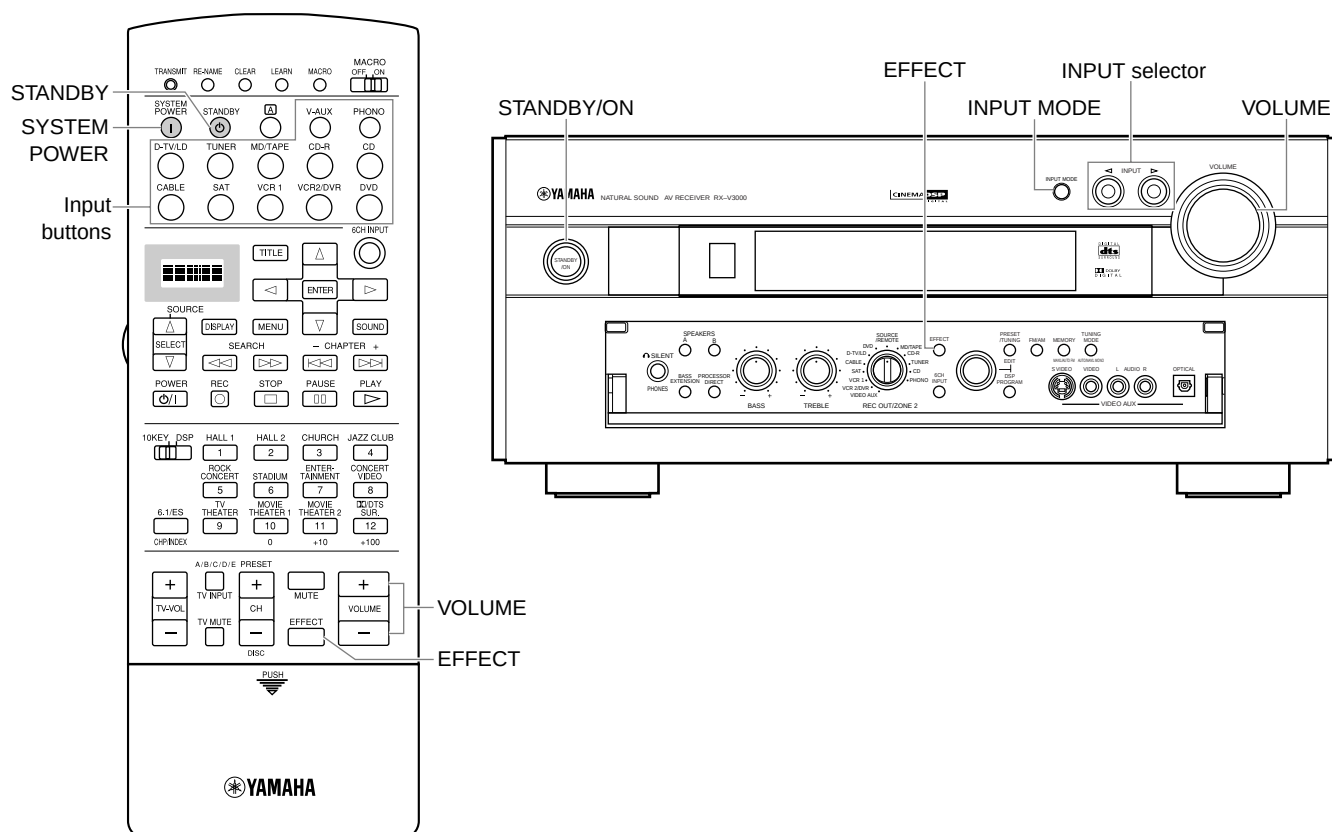
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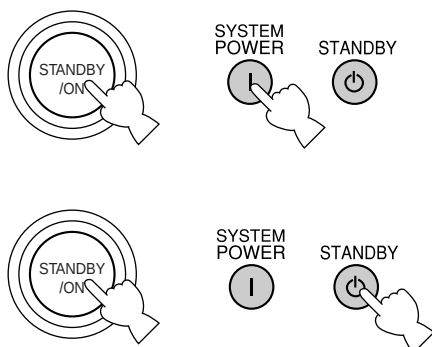
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Basic Playback

Playback operation is described with buttons on this unit and the remote control. These button names are noted in the order of “button name (remote control button name).”



Power Control



- 1 Press **STANDBY/ON** (or **SYSTEM POWER** on the remote control) to turn on the power.

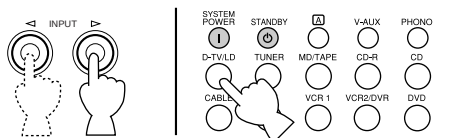
- The front panel (and the monitor screen) shows the level of the volume for a few seconds and then switches to show the current sound field program.

- 2 Press **STANDBY/ON** (or **STANDBY** on the remote control) to turn off the power.

Note:

- This unit stores its current operational status in memory before the power is turned off. By connecting a commercially available timer to this unit, you can easily playback or record a source at any time you wish.

Selecting a Source



The selected source

D-TV / LD	DVD
CABLE	MD / TAPE
SAT	CD-R
VCR 1	TUNER
VCR2 / DVR	CD
V-AUX	PHONO

- 1 Select the source using the **INPUT** selector, or press one of the input buttons on the remote control.

- The current source is indicated on the front panel display with an arrow.
- The current source name and input mode appear on the front panel display and the video monitor for a few seconds.

Select this source:

To reproduce the signal from this component.

DVD	DVD player
D-TV/LD	LD player/Digital TV or TV
CABLE	Cable TV
VCR 1	Video deck 1
VCR 2/DVR	Video deck 2 or Digital Video Recorder
V-AUX	Other AV component
PHONO	Turntable
CD	CD player
TUNER	AM/FM tuner
MD/TAPE	MD recorder/TAPE deck
CD-R	CD Recorder
SAT	Satellite tuner

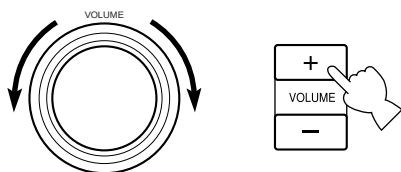
- 2 Start playback (or select a broadcast station) on the source component.

- Refer to the operation instructions for the component.

- 3 Adjust **VOLUME** (or **VOLUME +/-** on the remote control).

Caution:

- If the power of the component connected to the **VCR 1**, **VCR 2/DVR**, **MD/TAPE**, and **CD-R OUT** jacks is turned off, reproduced sound may be distorted or the volume may be lowered. In these cases, turn on the component.



■ BGV (Back Ground Video) function

The BGV (Back Ground Video) function allows you to combine a video signal from a video source with a sound signal from an audio source. (For example, you can listen to classical music while you are watching a video.)

Using the remote control, select a source from the video group, then select a source from the audio group. Use the input buttons on the remote control to make your selections. The BGV function does not work if you select the sources using the **INPUT** selector on the front panel.

Input Modes and Indications

This unit comes with various input jacks. If your external component is connected to more than one type of input jack, you can set the priority of the input signal. Press **INPUT MODE** on the front panel or an input button (press it repeatedly) on the remote control to display or change the input mode.

• AUTO

AUTO:DOLBY D.
 AUTO:DTS
 AUTO:PCM
 AUTO:ANALOG
 AUTO:----

AUTO: This mode is automatically selected when you turn on the power of this unit. In this mode, the input signal is automatically selected in the following order.

- 1) Dolby Digital or DTS encoded signals
- 2) Digital (PCM) signals
- 3) Analog signals

DTS: In this mode, only digital input signals encoded with DTS are selected even if other signals are input at the same time.

ANALOG: In this mode, only analog input signals are selected even if digital signals are input at the same time.

<When LD is selected as the input source> (General, China, and Singapore models only)

• DTS

DTS
 DTS:----

AUTO: In this mode, this unit automatically selects the signal in the following order.

- 1) Dolby Digital RF encoded signals
- 2) DTS encoded signals
- 3) Digital (PCM) signals
- 4) Analog signals

D.D. RF: This unit only selects Dolby Digital RF signals.

DTS: In this mode, only digital input signals encoded with DTS are selected even if other signals are input at the same time.

DGTL: This unit only selects digital signals input through the **OPTICAL** jacks.

ANALOG: This unit only selects signals input through the **ANALOG** jacks. This unit will not select Dolby Digital RF or DTS signals.

• ANALOG

ANALOG
 ANALOG:----

Notes:

- If digital signals are input from both the **COAXIAL** and **OPTICAL** jacks, the digital signal from the **COAXIAL** jack is selected.
- When AUTO is selected, this unit automatically determines the type of signal. If this unit detects a Dolby Digital or DTS signal, the decoder automatically switches to the appropriate setting and reproduces 5.1 channel source.
- The sound output may be interrupted for some LD and DVD players in the following situation: The input mode is set to AUTO. A search is performed while playing the disc encoded with Dolby Digital or DTS, and then disc playing is restored. The sound output is interrupted for a moment because the digital signal was selected again.

■ Notes on playing a source encoded with a DTS signal

- If the digital output data of the player has been processed in any way, you may not be able to perform DTS decoding even if you make a digital connection between this unit and the player.
- If you play a source encoded with a DTS signal and set the input mode to ANALOG, this unit reproduces the noise of an unprocessed DTS signal. When you want to play a DTS source, be sure to connect the source to a digital input jack and set the input mode to AUTO or DTS.
- If you switch the input mode to ANALOG while playing a source encoded with a DTS signal, this unit reproduces no sound.
- If you play a source encoded with a DTS signal and set the input mode to AUTO, there will be a moment of noise while the unit recognizes the DTS signal and turns on the DTS decoder. This is not a malfunction. You can avoid this by setting the input mode to DTS beforehand.
- If you continue to play a source encoded with a DTS signal with the input mode setting left to AUTO, this unit automatically switches to the “DTS-decoding” mode to prevent noise from being generated during subsequent operation. (The “**dts**” indicator lights up on the front panel display.) The “**dts**” indicator will flash immediately after playback of a source encoded with a DTS signal has finished. Only a source encoded with a DTS signal can be played back while this indicator is flashing. If you want to play a normal PCM source soon, set the input mode back to AUTO.
- The “**dts**” indicator will flash when the input mode is set to AUTO and a search or skip operation is performed while playing back a source encoded with a DTS signal. If this status continues for 30 or more seconds, the unit will automatically switch from the “DTS-decoding” mode to PCM digital signal input mode and the “**dts**” indicator will go out.

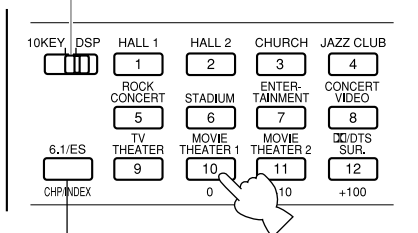
■ Notes on playing an LD or DTS CD source

- For LD software that does not contain a digital soundtrack, connect the LD player to the analog jacks and set the input mode to AUTO or ANALOG.
- If the LD player is transmitting a signal by a non-standard method, this unit cannot detect the Dolby Digital or DTS signal. In this case, the decoder automatically switches to PCM or analog.
- Some A/V components such as LD players output different audio signals through their analog and digital jacks. Change the input mode as necessary.
- While you are operating the LD player and playing a disc encoded with a Dolby Digital signal, if you switch from the pause or chapter forwarding function to normal playback, you may hear the PCM or analog sound an instant before the Dolby Digital signal is played.

Selecting a Sound Field Program

You can enhance your listening experience by selecting a DSP sound field program. The 25 DSP sound field programs are divided into 12 DSP program groups.

10KEY/DSP



6.1/ES

If you want to utilize the Rear Center speaker with a 5.1 channel program source, press **6.1/ES**.

- 1 Set **10KEY/DSP** on the remote to **DSP**.
- 2 Press the **DSP** button on main unit and rotate the Multi jog knob to select the desired sound field program.

Notes:

- If a DTS or Dolby Digital signal is input when the input mode is set to "AUTO", the sound field program automatically switches to the appropriate decoding program.
- Choose a sound field program based on your listening preference, not on the name of the program. The acoustics of your listening room affect the sound field program. Minimize the sound reflections in your room to maximize the effect created by the program.
- When you select an input source, the main unit automatically selects the last sound field program used with that source.
- When you turn off the main unit, the current source and sound field program are memorized and are automatically selected when you turn on the power again.
- When high rate 96 kHz sampling digital signals are output from source equipment, the DSP sound field cannot operate on the source sounds. In this case, the sounds are reproduced as normal 2-channel stereo.

Hi-Fi DSP Programs

Concert Hall 1	Concert Hall 2	Church	Jazz Club	Rock Concert	Stadium	Entertainment
Europe Hall A Europe Hall B	U.S.A. Hall C Live Concert	Freiburg Royaumont	Village Gate The Bottom Line	Roxy Theatre Arena	Anaheim Bowl	Disco 8ch Stereo

CINEMA-DSP Programs

Entertainment	Concert Video	TV Theater	Movie Theater 1	Movie Theater 2	DOLBY/DTS SURROUND
Game	Pop/Rock Classical/Opera	Mono Movie Variety/Sports	Spectacle Sci-Fi	Adventure General	Normal/Matrix 6.1/ES Enhanced/6.1/ES

Virtual CINEMA DSP and HP CINEMA DSP

You can experience the virtual CINEMA DSP sound field by setting the 1C. REAR L/R SP item in the SET MENU to "NONE." The sound field processing is changed to the Virtual CINEMA DSP mode according to the selected sound field program. The Virtual CINEMA DSP allows you to enjoy the virtual sound fields without Rear speakers. Signals for Rear channels are output from the Main speakers. You can also listen to HP (Headphone) CINEMA DSP by connecting your headphones to the **PHONES** jack while the DSP sound fields are on. When high rate 96 kHz sampling digital signals are output from source component, the Virtual CINEMA DSP and HP CINEMA DSP cannot operate on the source sounds.

Note:

- This unit is not set in the virtual CINEMA DSP mode even if "1C REAR L/R SP" is set to NONE in the following cases:
 - when the 8ch Stereo, DOLBY DIGITAL/Normal or DTS/Normal program is selected;
 - when the sound effect is turned off;
 - when 6CH INPUT is selected as the input source;
 - when 96-kHz sampling digital signals are input to this unit;
 - when the Dolby Digital KARAOKE source is played;
 - when using the test tone; or
 - when connecting the headphones.

EFFECT



EFFECT OFF

Normal stereo reproduction

For normal stereo reproduction, press **EFFECT** to turn off the effect.

Notes:

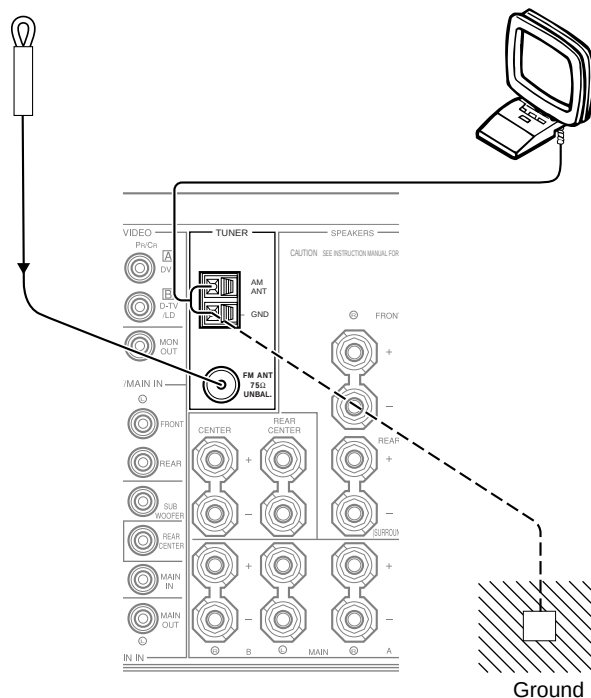
- When you turn off the effect, no sound is reproduced from the Front Effect, Center, Rear, and Rear Center speakers.
- If you turn off the effect while DTS or Dolby Digital signals are being reproduced, the dynamic range of the signal is automatically compressed.
- The sound volume may be extremely reduced when you turn off the effect or if you change a SET MENU item. In this case turn on the effect.

Connecting the Antennas

Both AM and FM indoor antennas are included with this unit. These antennas should provide sufficient signal strength in most situations. However, a properly installed outdoor antenna provides clearer reception. If you experience poor reception quality using the indoor antennas, an outdoor antenna may improve the reception. Connect each antenna as shown below.

Indoor FM antenna (included)

AM loop antenna (included)



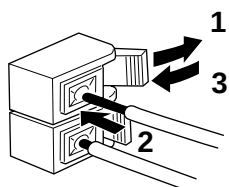
■ Connecting the indoor FM antenna

Connect the included indoor antenna to the 75Ω **UNBAL. FM ANT** terminal.

■ Optional outdoor FM/AM antenna

Consult your dealer or authorized service center about the best method of selecting and erecting outdoor antennas.

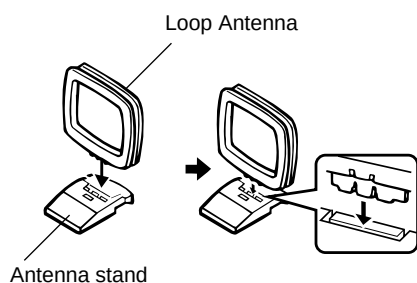
■ Connecting the AM loop antenna



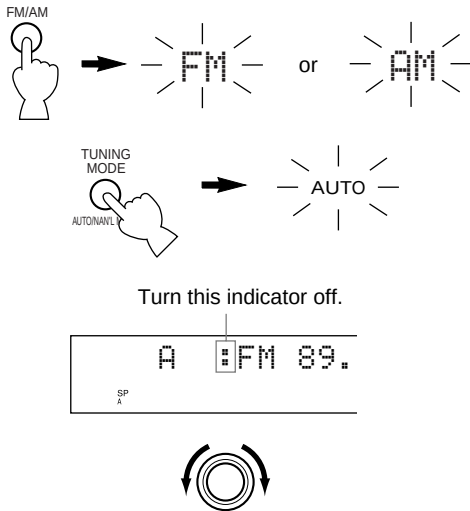
- 1 Press the tab to unlock the terminal hole.
 - 2 Insert the AM loop antenna lead wires to the **AM ANT** and **GND** terminals.
 - 3 Lift the tab to its original position to lock the lead wires.
- Lightly pull on the lead wires to confirm a good connection.
- 4 Attach the loop antenna to the antenna stand.
 - 5 Orient the AM loop antenna so that the best reception is obtained.

Notes:

- The AM loop antenna should be placed away from this unit. The antenna may be hung on a wall.
- The AM loop antenna should remain connected, even if an outdoor AM antenna is connected to this unit.
- To minimize the influence of automobile ignition noise, locate the antenna as far from heavy traffic as possible.
- Keep the ribbon cable or coaxial cable as short as possible.
Do not bundle or roll up excess cable.
- The antenna should be at least 1.8m (6 feet) from reinforced concrete walls and metallic structures.



Automatic Tuning



- 1 Select “TUNER” as the input source.

You can use the **INPUT** selector on the main unit or the input button on the remote control.

- 2 Press **AM/FM** to select the reception band.

“FM” or “AM” appears in the display.

- 3 Press **TUNING MODE** so that the AUTO tuning indicator appears in the display.

If the colon (:) appears in the display next to the AM or FM indicator, press **PRESET/TUNING** to turn it off.

- 4 Turn the Multi jog knob clockwise or counterclockwise to start automatic tuning.

Turn the Multi jog knob clockwise to tune to a higher frequency or counterclockwise to tune to a lower frequency.

Use manual tuning if the tuning search does not stop at the correct station because the signals are weak.

■ For manual tuning

- 1 Press **TUNING MODE** so that the AUTO tuning indicator goes off in the display.

If the colon (:) appears in the display next to the AM or FM indicator, press **PRESET/TUNING** to turn it off.

- 2 Turn the Multi jog knob clockwise or counterclockwise to tune to the desired station manually.

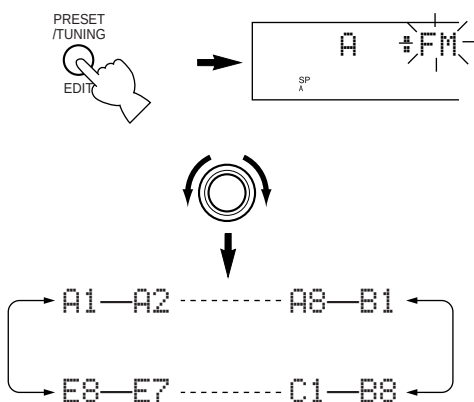
Hold on the knob to continue the tuning search.

Automatic tuning is effective when the radio signals are strong and have no interference. However, manual tuning is best for weaker signals that have some interference.

Note:

- Manually selecting an FM station will automatically change the reception to monaural to increase the signal quality.

Tuning to Preset Stations



- 1 Press **PRESET/TUNING** so that the colon (:) appears next to the AM or FM indicator.

The colon (:) must appear in the display to recall preset stations. If necessary, press **PRESET/TUNING** again.

- 2 Turn the Multi jog knob clockwise or counterclockwise to select the desired preset station number.

The preset number appears in the display along with the band, frequency and signal strength information.

Presetting Stations

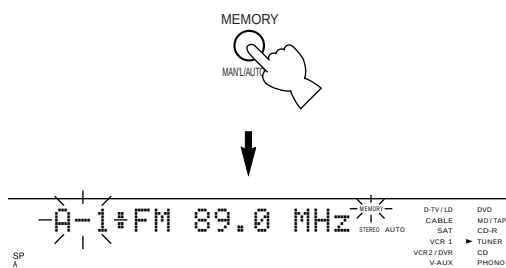
■ Automatically presetting stations

You can use the Automatic Preset Tuning feature to store FM stations. With this function, the unit automatically tunes to FM stations with strong signals, then stores up to 40 of those stations in order.

- 1 Tune to the FM station from which you want automatic presetting to begin.
- 2 Press and hold **MEMORY** for more than 3 seconds.

The preset number and the MEMORY and AUTO tuning indicators flash. Then, after about five seconds, automatic preset tuning begins.

When Automatic Preset Tuning is complete, the display shows the frequency of the last preset station.



Automatic Preset Tuning Options

Before Automatic Preset Tuning begins (within about five seconds), you can set the preset number from which the unit will store FM stations and the direction in which the unit will scan for stations.

- 1 Press **PRESET/TUNING** to display the colon (:). Then turn the Multi jog knob to select the preset station number where the first station will be stored. The unit will stop storing stations if it reaches preset number E8.
- 2 Press **PRESET/TUNING** to turn off the colon (:). Then turn the Multi jog knob counterclockwise to scan for lower frequency stations or clockwise to scan for higher frequency stations. If you do not turn either direction before Automatic Preset Tuning begins, the unit will scan for higher frequency stations.

Notes:

- You can replace a preset station with another FM or AM station manually by simply following the procedure of the section “Manually presetting stations”.
- If the number of received stations does not reach to E8, the search finishes automatically after searching all frequencies.
- With this function, only FM stations with sufficient signal strength are stored automatically. If the station you want to program is weak in signal strength, tune to it in monaural mode manually, then program it by following the procedure in “Manually presetting stations”.

■ Manually presetting stations

This unit can store up to 40 stations (8 stations x 5 groups). Using this feature, you can easily tune to any preset station by selecting the preset station number.

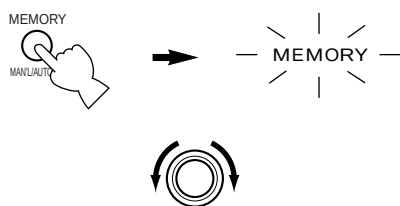
- 1 Tune to a station.
- 2 Press **MEMORY (MAN'L/AUTO FM)**.

The MEMORY indicator flashes for about five seconds.

- 3 Turn the Multi jog knob clockwise or counterclockwise to select a preset station number.

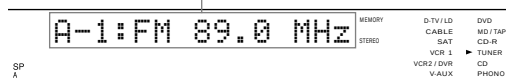
Note:

- You must select a preset station number before the MEMORY indicator goes off (about five seconds).





Shows the displayed station has been programmed to A-1.



4 Press **MEMORY (MAN'L/AUTO FM)**.

The station band and frequency appear in the display with the preset group and number you selected.

5 Repeat steps 1 through 4 to store other stations.

You can store up to 40 stations (A1~A8, B1~B8, C1~C8, D1~D8, and E1~E8).

Exchanging Preset Stations

You can exchange the stations stored on two preset numbers. The example below describes the procedure for exchanging the stored stations at preset numbers E1 and A5.

1 Tune to the E1 preset station number.

See "Tuning to Preset Stations."

2 Press and hold **PRESET/TUNING (EDIT)** for more than 3 seconds.

"E-1" flashes in the display.

3 Tune to the A5 preset station number.

See "Tuning to Preset Stations."

A-5 flashes in the display.

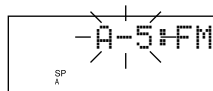
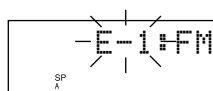
4 Press **PRESET/TUNING (EDIT)** again.

The stations stored at the two preset locations are exchanged.

Notes:

- The memory back-up circuit prevents the stored data from being lost even if this unit is set to standby mode, the power cord is disconnected from the AC outlet, or power service is temporarily cut due to power failure. However, if the power is cut for more than one week, the memory may be deleted.
- Any stored station data existing at a preset number is cleared when you store a new station at that preset number.
- The reception mode (stereo or monaural) is stored along with the station frequency.

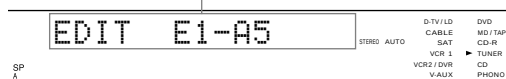
PRESET
/TUNING
EDIT



PRESET
/TUNING
EDIT

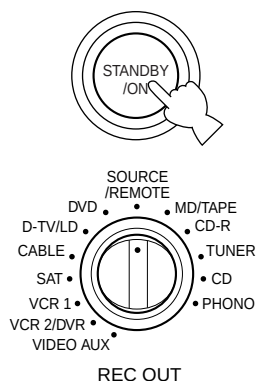


Shows the exchange of stations is completed.



REC OUT allows you to record one source while viewing and/or listening to another source.

Preparations



- 1 Turn on the power to this unit and all connected component.
- 2 Select the source component you want to record using **REC OUT**.
 - To record the current source, set **REC OUT** to **SOURCE/REMOTE**.
 - To record a source that you do not want to reproduce, set **REC OUT** to the source you want to record.
- 3 Start playback (or select a broadcast station) on the source component.
- 4 Start recording on the recording component.
 - If you want to listen to another source, and **REC OUT** is not set to **SOURCE/REMOTE**, select the source you want to reproduce with the **INPUT** selector and adjust the volume.

Notes:

- Do a test recording before you start an actual recording.
- When this unit's power is off, you cannot record between other component connected to this unit.
- Operating **BASS** and **TREBLE**, **BASS EXTENSION**, **BALANCE**, **VOLUME**, and DSP programs do not affect the recorded signal.

Special considerations when recording DTS software

The DTS signal is a digital bitstream. Attempting to digitally record the DTS bitstream will result in noise being recorded. Therefore, if you want to use this unit to record sources that have DTS signals recorded on them, the following considerations need to be made.

For DTS encoded LDs, DVDs, and CDs:

Only 2-channel analog audio signals may be recorded as follows:

- **LDs:**
Set your Laser Disc player's left and right outputs to the analog soundtrack.
- **DVDs:**
Use the disc menu to set the DVD player's mixed 2-channel left and right audio outputs to the PCM or Dolby Digital soundtrack.
- **CDs:**
The DTS signal recorded on CDs can only be output as a digital bitstream, and therefore cannot be recorded.

Advanced Operation

SET MENU Items

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SET MENU Items

The SET MENU consists of sixteen items including the Speaker Set, Center Graphic Equalizer and Parameter Initialization features. Choose the appropriate item and adjust or select the values as necessary.

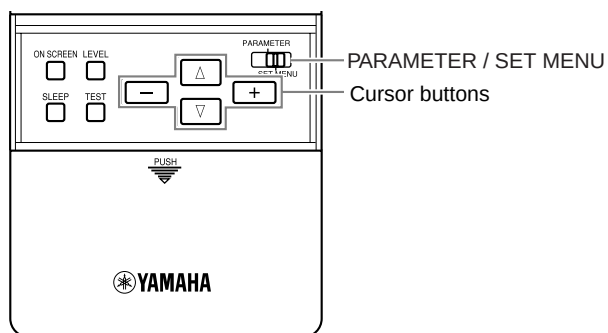
Notes:

- You can adjust the items in the SET MENU while reproducing a source.
- We recommend that you adjust the items in the SET MENU while using a video monitor. It is easier to see the video monitor screen than it is to see the front panel display on this unit while adjusting SET MENU items.

Items	Descriptions	Setting	Page
1. SPEAKER SET 1A. CENTER SP 1B. MAIN SP 1C. REAR L/R SP 1D. REAR CT SP 1E. LFE/BASS OUT 1F. FRNT EFCT SP 1G. MAIN LEVEL	Selects the output mode suitable for your Center speaker. Selects the output mode suitable for your Main speakers. Selects the output mode suitable for your Rear speakers. Selects the output mode suitable for your Rear Center speaker. Selects the output mode for LFE/BASS signal output. Selects the output mode suitable for your Front Effect speakers. Selects the output level for your Main channels.	LRG / SML / NONE LARGE / SMALL LRG / SML / NONE LRG / SML / NONE SWFR / MAIN / BOTH YES / NONE Normal / -10dB	37–39
2. LOW FREQ. TEST	Matches the Subwoofer level with the level of the other speakers.	TEST TONE; OFF / ON OUTPUT; MAIN L/R, MAIN L, CENTER, MAIN R, R SUR, REAR CT, L SUR, SWFR, FRONT FREQ.; 35Hz—250Hz (Wide or narrow band)	39
3. L/R BALANCE	Adjusts the sound balance for Left and Right channels.	L to 0 to R	40
4. HP TONE CTRL	Adjusts the tonal balance of the headphones.	BASS; -6dB to +3dB TRBL; -6dB to +3dB	40
5. CENTER GEQ	Matches the Center speaker tonal quality with the Main speakers.	5-band; -6dB to +6dB	40
6. INPUT RENAME	Changes the name of the inputs.	Up to eight characters.	40
7. I/O ASSIGN	Assigns the I/O terminals to the designated input sources.	Digital I/O, CMPNT input.	41
8. INPUT MODE	Selects the initial input mode of the sources.	AUTO / LAST	41
9. PARAMETER INI	Initializes the parameters of a group of DSP programs.	1 to 12	41
10. DOLBY D. SET 10A. LFE LEVEL 10B. D-RANGE	Adjusts the output level of the LFE channel for Dolby Digital signals. Adjusts the dynamic range for Dolby Digital signals.	SP, HP; -20dB to 0dB SP, HP; MAX / STD / MIN	42
11. DTS SET	Adjusts the output level of the LFE channel for DTS signals.	SP, HP; -10dB to +10dB	42
12. 6.1/ES AUTO	Selects the AUTO mode of Dolby Digital Matrix 6.1 and DTS ES decoding.	ON / OFF	42
13. SP DELAY TIME	Adjusts the delay time for Center and Rear Center speakers.	CENTER; 0ms to 5ms REAR CNTR; 0ms to 30ms	43
14. DISPLAY SET	Selects the display settings.	BLUE BACK; AUTO/OFF OSD SHIFT; 0 to 10 DIMMER; -4 to 0	43
15. MEMORY GUARD	Locks DSP program parameters and other SET MENU settings.	OFF / ON	43
16. ZONE 2 SET	Selects the mode of Zone 2.	ZONE2 OUT; FIXED / VAR. (variable)	43

Operating the SET MENU

Adjustment should be performed with the remote control. Some items require extra steps to change to the desired setting.

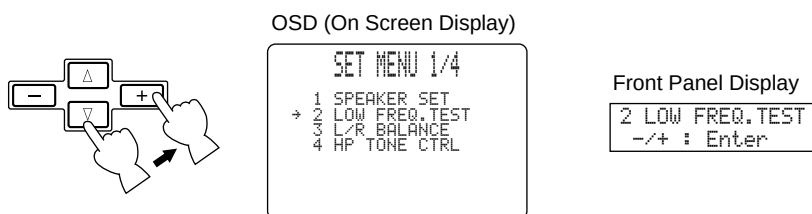


- 1 Set **PARAMETER/SET MENU** to **SET MENU**.

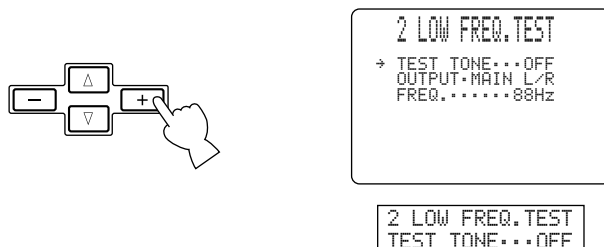


- 2 Press Δ or ∇ repeatedly to select an item from the table of SET MENU, then press $+$ or $-$ to enter the setting of that item.

- The last item you adjusted appears on the display.
- Some items have sub items.



- 3 Press $+$ or $-$ to change the setting of the item.



- 4 Press Δ or ∇ repeatedly or a DSP program button to exit the SET MENU.

